Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

g84Mm
Cop. 3

The Marketing And Pricing Structure For Bulk Sweet Cream

in Kansas, Missouri and Oklahoma Markets

DEC 27 1954
U. S. DEPARTMENT OF AGRICULTURE

Marketing Research Report No. 74

U.S. DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Washington, D.C.
November 1954

PREFACE

This report analyzes the marketing and pricing structure of bulk cream, one of the important factors involved in pricing "surplus" milk, in the larger fluid milk markets in Kansas, Oklahoma, and northwestern Missouri. It is based on one of a series of studies with the object of providing a basis for developing criteria and practicable methods for determining equitable prices for such milk in these areas.

Other aspects of the overall problem include such considerations as: (1) The organization and operating and pricing practices of the present marketing system for reserve and surplus milk, (2) prices received by handlers and nonhandlers (that is, plants not under Federal regulation) for products which may be made from such milk, (3) prices and other costs of emergency supplies that might be used in lieu of carrying a seasonal reserve, (4) costs incurred by handlers and nonhandlers in processing reserve and surplus milk, (5) accessibility of facilities, other than handlers' own plants, for processing reserve milk, together with costs and problems involved in their use, (6) response of handlers and potential handlers to changes in price levels for reserve and surplus milk, and (7) prices paid by unregulated milk plants for milk going into the same products for which reserve and surplus milk usually is used. Findings on these separate aspects, brought into proper relationship with one another and with the major objectives of pricing milk in the fluid markets of this area, would provide the basis for improvements in the pricing of this class of milk.

The Department of Agricultural Economics at Kansas State College cooperated in the survey on which this report is based. Paul L. Kelley participated in the general planning of the study, aided in the field work, and reviewed the manuscript in preliminary form. Howard L. Hall interviewed operators of about half of the plants studied.

Thanks are due the managers and personnel of the plants studied for their patient cooperation. Special acknowledgment is made of the important contributions of L. F. Herrmann in planning the broad study and providing counsel through its many stages of development and fruition.

— o O o —

The study on which this report is based was made under authority of the Agricultural Marketing Act of 1946 (RMA, Title II).

— o O o —

For sale by the Superintendent of Documents,
U. S. Government Printing Office, Washington 25, D. C. - Price 40 cents

CONTENTS

	Page
Summary	iii
Introduction	1
Purpose of this study	3
Scope and method of this report	4
Definition of reserve and surplus milk	5
Objective of pricing	6
Organization of the market for sweet cream	6
Characteristics of selling firms	6
Importance of different types of buyers	7
Location of buyers	8
Butterfat content of cream	8
Numbers and sizes of individual sales	8
Quantity of cream sold by individual firms	10
Quantity of cream sold by six-firm group, 1951-53	10
Quantity of cream sold in south central area and at Boston, Mass.	11
Interarea movement of cream	11
Weighted monthly average of prices received for sweet cream	13
Price structure of all sellers, 1951	13
Price structure of the six-firm group, 1951	16
Price structure of six-firm group, 1951-53	17
Price structure for 40 percent sweet cream and other than 40 percent	20
Price structure for sweet cream and all cream	21
Price structure of sweet cream in south central area and at wholesale in Boston, Mass.	21
Weighted weekly and daily averages of prices received for sweet cream	24
Weekly average	24
Daily average	24
The price structure for sweet cream	29
Monthly average prices received by individual firms	29
Prices received by individual firms during selected periods	31
Price surface during selected 15-day periods	35
Prices associated with size of scale	35
Prices associated with type of buyer using monthly average prices	39
Prices associated with type of buyer in selected 15-day periods	40
Relationship of prices for regulated and nonregulated sweet cream	41
Prices paid for sweet cream by handlers and nonhandlers	41
Prices received for sweet cream by handlers and nonhandlers	42
Appendix	49

SUMMARY

The major outlets for reserve and surplus milk in the fluid milk markets of Kansas, northwestern Missouri, and Oklahoma are its use in ice cream and cottage cheese, or its sale as milk or sweet cream to other plants manufacturing ice cream. Much of the milk going into such uses is priced by formulas using a fixed relationship to the prices for butter and nonfat milk solids at Chicago.

This study was made to provide the factual basis for considering whether the value of reserve and surplus milk might be indicated more precisely by the price of cream than by the price of butter. The data concerning the price structure and marketing practices for sweet cream in this area are based on an analysis of 13,400 sales, totaling 7 1/2 million pounds, of butterfat in sweet cream by 19 firms during 1951 (and of a smaller group in 1952 and 1953). The analysis indicates that:

(1) The average monthly price of sweet cream changed less from month to month in 1951 and part of 1952 than did the wholesale price of Grade A butter at Chicago. After November 1952, cream prices fell faster and farther than did the price of butter, and remained at an unfavorably low level throughout 1953. The average price of cream lost much of its stability (relative to butter) when broken down to a weekly basis, and fluctuated widely on a daily basis.

(2) For sweet cream sold in 1951 and 1952, all firms realized an average return of 126 and 127 percent, respectively, of the price of Grade A butter at Chicago. In 1953 the returns averaged only 121 percent.

(3) In 1951 and 1952 the prices which handlers in Kansas City and Oklahoma City were required to pay per pound of butterfat in 40 percent cream were about 4 cents and 6 cents less, respectively, than it would have cost them for cream at the weighted average price of all cream covered in this survey. By 1953 handlers in both cities had to pay about 3 cents a pound of butterfat more, relative to the weighted average, than in 1951 and 1952.

(4) Only three percent of all cream sales were made by handlers (plants regulated by Federal milk orders). For a number of reasons, they usually sold cream at prices that averaged between two and three cents a pound of butterfat less than those received either by nonregulated plants or by plants with both regulated and nonregulated operations.

(5) In 1951 the firm with the highest returns received a monthly average of about 12 cents more for each pound of butterfat in sweet cream than did the firm with the lowest returns. Among six of the largest firms, the range averaged 5 cents a pound, varying from 7 cents in April to 2 cents in October. There was a wide range in selling prices, even

during periods when the price of butter remained unchanged. Most firms varied selling prices, at least upon occasion, to certain types of buyers or to selected customers who purchased in large quantities.

(6) The weighted average price for sweet cream in this area had no fixed relationship to a similar price for cream sold in Boston, Mass. The monthly average spread between the two series ranged from 9.8 cents a pound of butterfat to 4.4 cents, depending on the season of the year.

If later analysis indicates a need for a regular reporting of prices for sweet cream (as a basis for measuring the value of butterfat in reserve and surplus milk), this study shows that (a) a sizable volume of sweet cream is regularly sold from this area, but (b) the wide range in prices received by different types of sellers (with most sales being made near the extremes of the price range rather than the center) will create serious problems in developing a cream price series and applying it to the pricing of reserve and surplus milk.

THE MARKETING AND PRICING STRUCTURE FOR BULK SWEET CREAM in Kansas, Missouri, and Oklahoma Markets

By Alexander Swantz
Agricultural Economist

INTRODUCTION

This report analyzes data collected to determine the pricing and marketing structure for bulk sweet cream in a trading area that includes six major fluid milk markets in Kansas, Oklahoma, and Missouri. The trading area surveyed includes the fluid milk markets and the milksheds for Greater Kansas City and Neosho Valley, in Missouri and Kansas; Topeka and Wichita, Kans.; and Oklahoma City and Tulsa-Muskogee, Okla. 1/ (Fig. 1.) This study is one of several designed to determine and evaluate the important factors involved in pricing reserve and surplus supplies of milk 2/ in federally regulated fluid milk markets within this area.

Several developments within recent years increased the need for improvements in the basis for pricing reserve and surplus milk in this area:

(1) There was a rapid shift from the production of farm-separated cream toward the production of whole milk. Many whole milk producers, in turn, responded to a wider spread between prices for Grade A and ungraded milk by shifting to the production of Grade A milk for the fluid markets.

(2) The imposition of stricter health standards by city officials caused producers to incur higher costs in producing Grade A milk, with resultant pressures from producers to recover such costs by higher prices for milk.

(3) Increased sales of skim milk drinks, ice cream mixes with lower butterfat contents, and frozen desserts containing vegetable fats

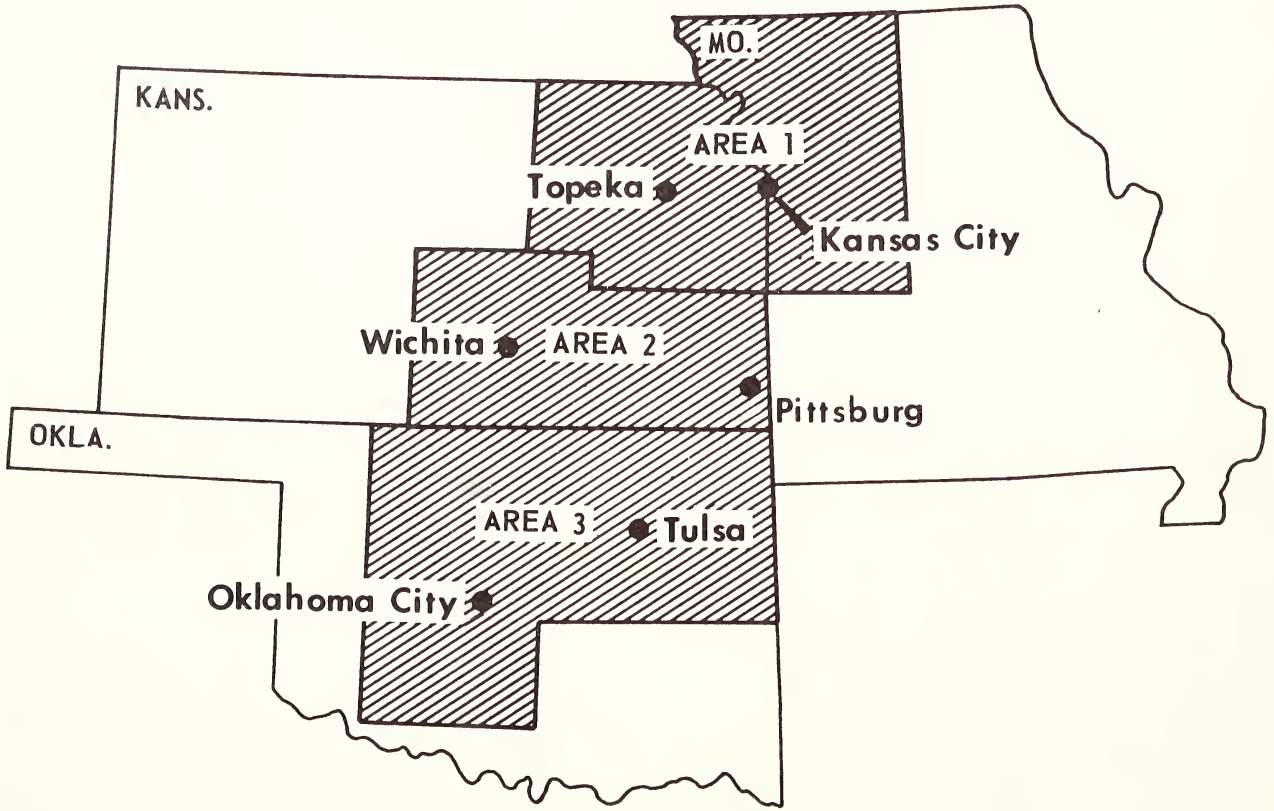
---

1/ This region lacks a common name. For convenience in this report it will be called the South Central Area. Alternatives which were considered, Mid-Central, Southwest and Southern Plains, all leave something to be desired. The term South Central may remind the reader that the geographic center of the U. S. lies in Kansas, near the northern edge of the territory covered by this study.

2/ The terms "reserve" and "surplus" milk are defined for the purpose of this report on page 5.

South-Central U. S.

SWEET CREAM PLANTS



U. S. DEPARTMENT OF AGRICULTURE

NEG. 1086-54(9) AGRICULTURAL MARKETING SERVICE

Figure 1.

and nonfat milk solids, combined with significant reductions in the amount of butterfat sold as fluid cream, forced a diversion of butterfat into lower-valued uses.

(4) Most fluid milk markets in this area have developed more adequate supplies of Grade A milk from local producers since World War II and rely less upon supplies from other areas. This necessarily increases the amount of milk relegated to manufacturing uses, at least during the months of flush production.

(5) The six major fluid milk markets in this area now are regulated by Federal milk orders, and these orders specify an exact formula or level for pricing milk diverted to manufacturing uses.

Under these conditions, the level of minimum prices for milk diverted to non-fluid uses, and the basis for establishing such prices, become highly important to producers, to handlers 3/, and to non-handlers 3/ who regularly compete with handlers. A widespread feeling exists among all interests in the area that present pricing levels and methods must be reevaluated in terms of the changing relationships just mentioned.

Purpose of This Study

One standard for the price for reserve and surplus milk is the market value, in the area concerned, of the products into which it is normally made. This standard would gear the price of reserve and surplus milk to changes in the prices of whole milk, milk components, or the final products.

The major outlets for reserve and surplus milk in most of the fluid markets of the South Central area normally are its use in ice cream and cottage cheese, or its sale as milk or cream to other plants manufacturing ice cream. Handlers of fluid milk in these markets who also manufacture ice cream have the long-run alternatives of using reserve and surplus milk in their ice cream operations, or of purchasing sweet cream, condensed skim milk, or nonfat powder from non-regulated plants.

This study was made to determine the price structure and marketing practices for sweet cream in the South Central area. A knowledge of these prices and practices, and particularly the comparison of sellers having fluid milk operations with sellers who use only manufacturing-grade milk, should provide a sounder basis for evaluating: (1) The relationship between prices of sweet cream in the area and Grade A butter

---

3/ The terms "handler" and "non-handler," as used in this study and in milk pricing orders, refer to milk distributors who are and are not, respectively, regulated by Federal milk orders.

at wholesale in Chicago, (2) what prices would have been paid for cream by handlers manufacturing ice cream had they not used reserve milk for such purposes, (3) the relationship between prices for cream made from regulated and nonregulated milk in the area, and (4) the feasibility of following the practice of some markets which base minimum prices for butterfat on cream prices reported by the Market News Service of the USDA.

In addition, an industry-wide awareness of the exact structure and behavior of the sweet cream market should be valuable in providing a sounder basis for evaluating present practices and introducing efficiencies in distribution.

Scope and Method of This Report

The information on which this report is based was obtained by a survey of milk processing plants in the area known to have sold sweet cream, condensed milk and skim milk, ice cream mix, and nonfat dry milk solids, and of ice cream manufacturers who purchased these products.

Invoice data were obtained from these firms which indicated, for each transaction during the year 1951, the date of sale, the invoice price, the quantity of product, basis for pricing, method of shipment, the amount of transportation charges (when applicable), the type and location of buyer, and any premiums and discounts from the invoice price. Additional data concerning the basis for pricing, the factors affecting the price of fat and nonfat solids in the form of sweet cream and condensed milks, and the conditions and circumstances of the sale not ascertainable from invoice data were obtained by means of an accompanying questionnaire.

Twenty-three of the firms studied had sales of cream during 1951, and are classified, for purposes of this report, as "sellers." Their recorded sales fell into 3 categories, most important of which was about 7 1/2 million pounds of butterfat sold in the form of sweet cream by 19 of the firms. This category represented about 98 percent of all the recorded transactions. A second category is called "other cream," and includes sales of sour cream, fluid cream bottled for, but not sold on, retail or wholesale routes, and cream of extremely low butterfat content. Eight firms had at least some sales in this category; yet they made up only 1 1/2 percent of the total sales recorded. Transactions between members of the same parent company, or units in a chain of operations, were discarded for purposes of price analysis. These were classified as "no-price" transactions, and constituted less than 1 percent of the total volume.

Later analysis of the 1951 data showed that seven firms were dominant forces in the market from the standpoint of volume sold and influence on a weighted average price. On this basis, the price pattern for sweet cream sold during 1952 and 1953 was determined by using monthly

sales data from six of these seven major firms. Throughout this report the analysis compares the six-firm group with all firms in order to establish the exact relationship between them during 1951.

Definition of Reserve and Surplus Milk

In its broadest sense, and through common usage, the term "surplus" milk generally is understood to mean all milk regularly produced and delivered to distributors in a marketing area which exceeds the amount sold as fluid milk, fluid cream, and related fluid products.

In stricter terms, however, this "surplus" has three components. Each component is a result of the peculiar structure of fluid milk markets, and a close analysis shows that separate marketing and pricing problems and criteria apply to each.

The three components of "surplus" milk are:

(1) That milk in excess of handlers' daily sales of fresh milk and cream which must be carried by distributors to cover day-to-day fluctuations in such sales. This will be known as the "operating reserve."

(2) That milk in excess of daily sales and the daily "operating reserve" which must be carried by the market because of wide seasonal variation in milk production and a relatively steady seasonal demand for fluid milk products. This extra milk is the "seasonal reserve." With respect to supply, the usual goal in a market is to maintain a regular supply of milk which will cover needs for daily sales of fresh milk and cream and the operating reserve during the fall and early winter months. Because of the seasonal variation in production, a market must have facilities for handling or disposing of the "seasonal reserve" as part of its regular organizational structure.

(3) That milk in excess of (1) daily sales, (2) the operating reserve, and (3) the seasonal reserve. This milk is in excess of the market's normal fluid and reserve requirements, and is surplus milk in the more general sense. However, under certain market structures (particularly those using market-wide pooling), Class II may include milk used by handlers having integrated fluid milk and manufacturing operations (particularly for making ice cream). If this condition exists in a market, any conclusions regarding proper price levels for reserve and surplus milk must recognize this extra function.

Since both the "operating reserve" and the "seasonal reserve" are part of a market's normal structure, the term "reserve" milk will apply to a combination of operating and seasonal reserves. Thus, a distinction will be drawn, throughout this study, between these necessary and normal "reserves" and the remaining "surplus."

Objective of Pricing

The price for reserve and surplus milk is much more sensitive, and difficult to determine, than the Class I price. The sensitivity of the price stems mainly from the unequal distribution of the supply among competing handlers, from the general competitive factors involved in the supply and the sale of the products, and from the powerful influence of the price level on the competitive positions of the firms involved. In addition, the margins realized in processing reserve and surplus milk can affect the margins that handlers will take on sales of fluid milk products. In any event, some handlers suffer an economic disadvantage regardless of the pricing levels or pricing methods used for reserve and surplus milk. The problem becomes one of minimizing these undesirable effects.

For reserve milk then, the goal is to establish a price that will mitigate the undesirable competitive effects of too high or too low price levels, at the same time making due allowance for the alternative function played by reserve milk: That of a standby reserve which can be diverted into Class I (fluid) uses when day-to-day and week-to-week fluctuations in demand require.

For surplus milk as defined above, the goal is to establish a price that will return producers full value for their milk. This ordinarily will permit conversion of surplus milk into manufactured products without having the efficient manufacturer incur financial losses and without fostering any of the undesirable competitive effects of inaccurate pricing. The handlers who process the reserve, and particularly the surplus, perform a real service for all parties in the market, and under normal conditions, should not be expected to carry the burden themselves.

ORGANIZATION OF THE MARKET FOR SWEET CREAM

Characteristics of Selling Firms

Of the 19 firms surveyed, 7 had no operations regulated by Federal milk orders, all the operations of 5 were so regulated, and in the remaining 7, Grade A milk operations were under Federal regulation and ungraded milk operations were not. The plants in the six-firm group of major plants, mentioned previously, were fairly evenly scattered throughout the areas; however, none of them was completely regulated by Federal milk orders.

The sellers were about evenly divided as to how closely they followed the price of butter when they set their selling prices for cream. One half reported they varied the price each day the price of butter at Chicago changed; the other half reported a policy of establishing a "steady" or "level" price. Of the 7 firms that had the largest volume of business (92 percent of the total), 4 used a variable pricing policy and 3 used a steady pricing policy.

Nearly all of the firms using a variable pricing policy based selling prices for cream on the price of butter at wholesale in Chicago. Only in one or two special cases was the local selling price based on the New York market. All but two of the sellers said they used the price for Grade A butter (92-score).

The pricing formula most often mentioned by variable-pricing firms was Grade A butter at Chicago, day of sale, times 1.25, plus 2 or 3 cents. Two firms reported a selling price based on Grade A butter times 1.30. However, nearly every firm qualified its answer by stating that its basic price was increased or decreased 1 or 2 cents a pound of butterfat depending on the season of the year, local supply and demand conditions, and the quantities involved. Some firms, particularly those without butter manufacturing facilities, reported that certain sales of cream were made on the basis of 1.16 to 1.19 times the Chicago butter price, whereas others reported that 1.20 times the Chicago butter price was their minimum selling price. Only on rare occasions did sellers use contracts or base prices on weekly or monthly average prices for butter.

The firms using a steady-price policy established their basic price level after calculations which began with either (1) a formula similar to those mentioned, or (2) the cost of milk or butterfat as purchased from farmers. In either case, further adjustments were made for anticipated supply and demand conditions for cream in the local trading area and for butter and dairy products on a national basis. The final price was an estimate of one which could remain steady for as long a time as possible.

Importance of Different Types of Buyers

Sixty percent of all the sweet cream sold in 1951 by firms in this survey went to the two types of plants manufacturing ice cream. This does not include sweet cream purchased by such manufacturers through brokers. Companies with combined fluid milk-ice cream operations were more important buyers than firms manufacturing ice cream alone, taking 35 percent of the total quantity as compared with 24 1/2 percent for the latter group (appendix table 17).

Firms having multiple-use manufacturing facilities were the third most important users of sweet cream produced in this area, purchasing about 18 percent of the quantity sold in 1951. Brokers and butter manufacturers were the other important outlets, taking 13 and 6 1/2 percent, respectively. Fluid milk plants located in a number of small communities throughout the area purchased 1 1/2 percent of the sweet cream sold, presumably for bottling and sale as fluid cream.

There were some seasonal variations in the purchases of sweet cream among different types of plants (table 17). Most apparent is the increased importance of fluid milk and fluid milk-ice cream plants during the fall and winter months and of specialized ice cream manufacturers

from March through September. Multiple-use plants, butter manufacturers, and brokers tended to vary in importance from month to month, although no seasonal trends in the variation were apparent. The importance of ice cream as an outlet for sweet cream during 1951 is attested by the fact that even during the months of January-April such buyers took 51 to 55 percent of the total quantity of cream sold.

Location of Buyers

Plants in 12 States purchased sweet cream from this area in 1951. Of these, buyers in Texas were the most important outlets—taking nearly one-third of the total quantity sold. Buyers in Kansas purchased the second largest amount (20 percent), followed by the 13 percent sold in Missouri. Next in order of importance were buyers in Colorado, Nebraska, Oklahoma, and New Mexico (table 1).

It also is apparent from data in appendix table 18 that sales to certain areas and States varied seasonally, or were quite sporadic. Since the greatest variability in demand occurred in States outside the production area (which bought over 40 percent of the total volume in 1951), it is clear that conditions in the outside market have a substantial effect on marketing and pricing conditions for sweet cream in the South Central area.

Butterfat Content of Cream

More than 95 percent of the sweet cream sold contained 40 percent butterfat, reflecting the predominant and long-standing trade practice of standardizing sweet cream to this composition. If the range in tests for "40 percent cream" is widened slightly to include 36 to 44 percent (on the basis that these were "near misses" of an intent to sell 40 percent cream), the proportion increases to more than 98 percent of all sweet cream sales (appendix table 19). The only other significant amounts of butterfat sold by these firms in 1951 were in 30, 35, and 50 percent sweet cream.

Numbers and Sizes of Individual Sales

Multiple-use manufacturers and brokers averaged more than 2,500 pounds of butterfat at each purchase in 1951, exceeding greatly the overall average of 564 pounds. Sales to butter manufacturers averaged about 1,300 pounds of butterfat in each shipment. Ice cream manufacturers and buyers with fluid milk-ice cream operations took 400 and 490 pounds, respectively, to approximate the average for all sales. Fluid milk plants with and without manufacturing facilities bought at amounts far below the average—180 and 100 pounds respectively.

The sizes of sales varied seasonally in a number of cases. Most apparent was the increased size of sales to multiple-use manufacturers and

Table 1.- Butterfat sold as sweet cream to buyers in specified States, 1951

State	Butterfat sales	Percentage of total sales
	Pounds	Percent
Unknown	1,945	0.02
Arkansas	43,592	.57
Colorado	773,197	10.16
Georgia	7,040	.09
Indiana	121,605	1.60
Iowa	5,377	.07
Kansas	1,542,209	20.26
Louisiana	117,685	1.55
Missouri	1,002,705	13.17
Nebraska	650,080	8.54
New Mexico	384,249	5.05
Oklahoma	509,724	6.69
Texas	2,453,830	32.23
Total	7,613,238	100.00

brokers in the months of flush production and to fluid milk plants in the months of lowered production in the fall. Ice cream manufacturers and fluid milk-ice cream operators bought cream in substantially the same-sized lots during the year.

In terms of number of sales, 75 percent were made to ice cream manufacturers and fluid milk-ice cream operators. Fluid milk plants accounted for another 8 percent, with remaining sales spread rather evenly over all other types of buyers (appendix table 20).

Quantity of Cream Sold by Individual Firms

The volume of cream sold by individual firms is an important consideration in determining how many plants to include in a market news report. Three of the firms covered in this survey sold about 60 percent of the cream in 1951 (appendix tables 21 and 22). The 7 largest firms taken together sold about 91 percent of all cream, 92 percent of the sweet cream, and 96 percent of the 40 percent sweet cream. The data in table 2 show the volume of sweet cream sold by three groups of firms, and help explain why the weighted average price of the 6-firm group was changed so little by expanding the sample to include sales of sweet cream by all firms or even all sales of all cream by all firms.

Table 2.- Butterfat sold as sweet cream by plant groups, 1951

Plant group	Butterfat sales	Percentage of total sales
	Pounds	Percent
6 firms (in subsample)	6,273,567	82.9
7 largest firms	6,966,986	92.1
All firms (19)	7,563,436	100.0

Quantity of Cream Sold by Six-Firm Group, 1951-53

The quantity of cream sold by the 6 firms making up the subsample for 1952 and 1953 increased each year after 1951. On the basis of the first 10 months of each year, sales increased 2.8 and 8.7 percent, respectively, over the 1951 level. Actual quantities sold were as follows:

January-October	Pounds of butterfat sold as sweet cream during 10 months, January-October
1951	5,466,911
1952	5,618,565
1953	5,941,120

The only noticeable change in sales patterns between 1951 and the 1952-53 period was a tendency for a greater proportion of the sales to be made from May through September than previously.

Although detailed data are not available to substantiate the belief, most persons in the area felt that a greater proportion of the sweet cream sold in 1952, and in 1953 particularly, was diverted to

butter manufacturers because of a decreased demand from ice cream manufacturers. The prices received for sweet cream sold, particularly in 1953, are consistent with this observation.

Quantity of Cream Sold in South Central Area and at Boston, Mass.

One approach to the question of what volume of cream is needed to support a continuing market news report is to use as a comparison the volume of cream used in reporting wholesale market prices at Boston, Mass. 4/ The firms covered in this survey sold 33 percent more sweet cream in 1951 than was used as a basis for reporting the weighted average cream price at Boston (appendix table 22). The 6-firm group alone sold 10 percent more sweet cream than was included in the Boston quotation.

One aspect of the monthly variations in quantity of cream in each price series during 1951 (as detailed in table 22) is the widely different seasonal patterns. Proportionally greater volumes of sweet cream were included in the Boston price during November, December, January, and February, whereas the volume sold by South Central firms averaged 149 percent greater during the other months of the year. In fact, it averaged 271 percent greater than Boston during the flush production months of April, May, and June. However, it must be remembered that the Boston data exclude most, if not all, of the cream from the local milkshed. Consequently, an inverse seasonality is to be expected.

Interarea Movement of Cream

An important aspect of the cream pricing problem is whether the entire South Central area should be considered a single market or several markets. One factor to consider is the degree to which firms in the area overlap or intermingle their sales. All sellers were grouped according to their locations (fig. 1) and called (1) area 1 sellers, (2) area 2 sellers, and (3) area 3 sellers.

The nine sellers located in area 1 (northwest Missouri and northeast Kansas) sold 64 percent of all the cream covered in the survey. They sold to buyers in all but two of the locations listed in table 3, with only one-quarter of their sales going to buyers in their own area (table 3). Another 25 percent of the cream from area 1 went to Texas, 13 percent to Nebraska, and 11 percent to Colorado.

The three sellers located in area 2 (southwestern Kansas) sold 23 percent of all the cream. It went to buyers in 12 different locations. No sales were made to area 1, and very few sales in area 3. In fact, only

---

4/ The only important published weighted average price series for sweet cream in the United States. For an explanation of the make-up of this series, see page 21.

Table 3.- Purchases of butterfat sold as sweet cream by location of seller and of buyer, South Central area, 1951

Location of buyers	Butterfat purchases from sellers in area - 1		2		3		All areas	
	Quantity purchased	Percentage of total	Quantity purchased	Percentage of total	Quantity purchased	Percentage of total	Quantity purchased	Percentage of total
	Pounds	Percent	Pounds	Percent	Pounds	Percent	Pounds	Percent
NE Kansas & NW Mo.	1,320,089	27.0	-	-	-	-	1,320,089	17.3
SE Kansas	82,783	1.7	804,055	46.0	-	-	886,838	11.7
Central & NE Okla.	119,631	2.4	3,266	.2	357,280	36.8	480,177	6.3
NE Missouri	143,179	2.9	17,596	1.0	-	-	160,775	2.1
Southern Missouri	1,188	1/	-	-	-	-	1,188	1/
Arkansas	22,634	.5	-	-	20,958	2.2	43,592	.6
Western Kansas	164,697	3.4	13,272	.8	-	-	177,969	2.3
SE & Western Okla.	-	-	2,400	.1	27,147	2.8	29,547	.4
SE Nebr. & SW Iowa	652,364	13.3	3,093	.2	-	-	655,457	8.6
Texas	1,249,958	25.5	644,690	36.9	559,182	57.5	2,453,830	32.2
Colorado	532,309	10.9	240,888	13.8	-	-	773,197	10.2
Georgia	-	-	7,040	.4	-	-	7,040	.1
Indiana	112,498	2.3	9,107	.5	-	-	121,605	1.6
Louisiana	110,560	2.3	-	-	7,125	.7	117,685	1.5
New Mexico	382,403	7.8	1,846	.1	-	-	384,249	5.1
Total	4,894,293	100.0	1,747,253	100.0	971,692	100.0	7,613,238	100.0
Percentage of total sales	64.3		23.0		12.7		100.0	

1/ Less than 0.05 percent.

2 percent of the cream sold by these firms moved northward. About one half of their sales were to local buyers, with the major part of the remaining quantity moving to Texas and Colorado.

The 7 firms located in Oklahoma (area 3) sold 13 percent of all the cream in the survey. The same basic situation existed here as in area 2--(1) no sales were made to firms located north of the selling area and (2) the greatest quantity went to out-of-area markets. Cream was sold to 5 different areas, with 37 percent going to local users. Texas was the most important outlet, taking about 58 percent, the remainder going in about equal volumes to buyers in other parts of Oklahoma and in Arkansas.

These interarea movements of cream during 1951 indicate (a) that no significant volume of sales was made to buyers in areas north of the areas in which the sellers were located, (b) that sellers in the more northern areas made very few sales immediately to the south, and (c) that all sellers in all areas competed with each other for sales to Texas.

WEIGHTED MONTHLY AVERAGE OF PRICES RECEIVED FOR SWEET CREAM

The principal data for this part of the study consist of the prices at which sweet cream was sold by 19 firms in the South Central area during 1951 and their relationship to the Chicago butter market. The data for 1951, analyzed in the first part of this chapter, showed that cream prices did move differently from those for butter and that a reporting of them might be of some value to the industry. However, it seemed wise to test the pattern of cream prices over a period of time longer than one year, particularly since the market for butterfat in ice cream has begun to meet growing competition from vegetable-fat frozen desserts. In the second part of the chapter, these longer-run relationships are shown by using the prices received by six of the largest plants from January 1951 through October 1953.

Price Structure of All Sellers, 1951

The weighted 5/ monthly average of prices received for butterfat in sweet cream sold by 19 firms in the South Central marketing area changed less from month to month in 1951 than did the wholesale price of Grade A butter in Chicago (fig. 2 and table 4).

Prices of sweet cream in this area remained almost steady from May through September (varying less than three-fourths cent) whereas the monthly average price of butter at Chicago varied about 3 cents a pound during the same period. The January-April range in prices for sweet cream was 1.7 cents as against a 3.3-cent range in butter prices. Also,

5/ Except where otherwise noted, the average cream prices used in this report are weighted averages, obtained by dividing the total value of cream sold by the total pounds of butterfat.

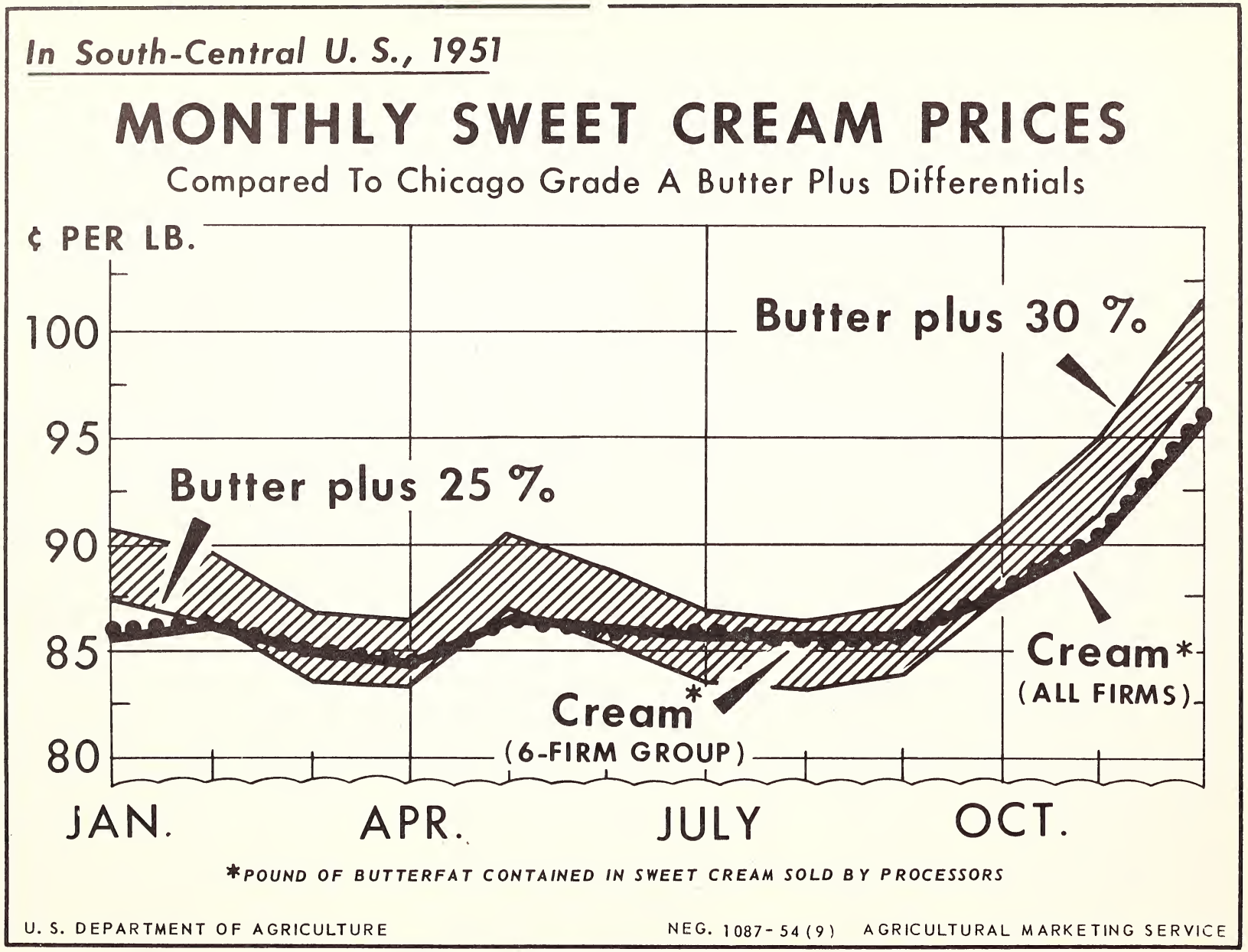

In South-Central U. S., 1951
MONTHLY SWEET CREAM PRICES
Compared To Chicago Grade A Butter Plus Differentials
¢ PER LB.
100
95
90
85
80
Butter plus 30 %
Butter plus 25 %
Cream*
(ALL FIRMS)
Cream*
(6-FIRM GROUP)
JAN.
APR.
JULY
OCT.
*POUND OF BUTTERFAT CONTAINED IN SWEET CREAM SOLD BY PROCESSORS
U. S. DEPARTMENT OF AGRICULTURE
NEG. 1087-54 (9) AGRICULTURAL MARKETING SERVICE

Figure 2.

Table 4.- Weighted average price per pound received by all sellers for butterfat sold as specified types of cream, South Central area, wholesale price of sweet cream at Boston, Mass., and price of Grade A butter at Chicago, Ill., by months, 1951

Month	Weighted average price per pound of butterfat received by - All sellers for - All cream	Sweet Cream: All tests	Sweet Cream: 40 percent	Sweet Cream: Other than 40 percent	Other cream	6-firm group for sweet cream	Wholesale price per pound: Weighted average, sweet cream, Boston	USDA average, Grade A butter, Chicago
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
January	85.7	85.7	86.0	81.4	80.9	86.0	95.5	69.8
February	85.8	86.0	86.1	82.0	77.8	86.3	95.1	68.9
March	84.9	84.9	84.9	84.3	76.3	85.0	92.7	66.7
April	84.3	84.3	84.4	82.0	75.5	84.5	90.6	66.5
May	86.2	86.3	86.4	85.5	79.0	86.4	92.1	69.5
June	85.6	85.9	85.9	85.7	77.1	85.8	91.0	68.2
July	85.3	85.6	85.7	84.2	75.2	85.9	90.5	66.7
August	85.5	85.6	85.7	84.3	71.6	85.5	90.2	66.4
September	85.5	85.6	85.7	82.1	77.0	85.7	90.0	67.0
October	87.4	87.5	87.8	82.6	80.1	87.9	93.0	69.9
November	89.9	90.0	90.4	84.1	82.0	90.5	98.4	73.0
December	95.8	95.8	95.8	94.1	93.0	96.1	104.5	78.0
Average								
Simple	86.8	86.9	87.1	84.4	78.8	87.1	93.6	69.2
Weighted	86.5	86.6	86.8	83.9	77.9	86.8	95.2	

the weighted average cream price resisted the downward movement that occurred in butter prices from January through September, but lagged behind the price increases for butter when that quotation was moving sharply upward after September.

The relative stability of the weighted monthly average of prices for sweet cream in the area also is reflected in the ratio of the cream price to butter values in Chicago. The 19 firms realized a return of 126 percent of Chicago butter prices for all butterfat sold as sweet cream during 1951. The returns varied from a low of 123 percent in January, November, and December (when butter prices were moving upward or near the end of an upward movement) to a high of 128 and 129 in July, August, and September and a secondary high of 127 percent in March and April (when the prices for butter generally were moving downward or were low) (table 5).

Table 5.- Ratio of weighted average price received per pound of butterfat in specified types of cream sold in the South Central marketing area to wholesale price of Grade A butter, Chicago, by months, 1951

Month	Ratio of average price for Grade A butter, Chicago to weighted average price received by -			
	All sellers			Six firms for sweet cream
	Sweet cream	All cream	40 percent sweet cream	
January	123	123	123	123
February	125	125	124	125
March	127	127	127	127
April	127	127	127	127
May	124	124	124	124
June	126	126	126	126
July	128	129	128	128
August	129	129	129	129
September	128	128	128	128
October	125	126	125	126
November	123	124	123	124
December	123	123	123	123
Average	126	126	125	126

Price Structure of the Six-Firm Group, 1951

The annaul average prices received for sweet cream by plants in the six-firm group differed by only 0.2 cent from the average price received by all 19 firms (table 4 and fig.2). The six-firm group yielded the higher weighted yearly price (86.8 cents compared with 86.6). The same relationship held true when monthly prices were averaged, except that the level of returns was slightly higher throughout--87.1 cents a pound compared with 86.9 cents.

The only noticeable difference in monthly price movements of the two groups of firms was that (1) the six-firm price level averaged only 0.1 cent higher from March through September whereas (2) it averaged 0.36 cent higher than the all-firm price level during the other months in 1951. The extreme range in differences between the two price series occurred in November (when the six-firm price was 0.5 cent a pound higher) and in June and August (when the six-firm price was 0.1 cent a pound lower). These price movements tend to support the generalization that regular high-volume sellers are able to obtain more favorable prices during periods of good demand for butterfat.

Price Structure of Six-Firm Group, 1951-53

The relationship between the price of Grade A butter in Chicago and the price of sweet cream in the South Central area, as shown in the preceding analysis for 1951, lasted through most of 1952. During both 1951 and 1952, surveyed plants averaged 126 and 127 percent respectively of the Chicago butter price for all sales of sweet cream. As in 1951, the cream price series in early 1952 lagged behind the sharp price increases for butter. Likewise, it resisted for awhile the subsequent sharp downward movement in butter prices. This relationship lasted only through November 1952, however.

Beginning with December 1952, cream prices began falling much faster than Chicago butter prices. After January 1953, the market for sweet cream remained much lower relative to butter values at Chicago than during 1951 and 1952. Compared with previous years' levels of 126 and 127 percent, the weighted average price for sweet cream fell to 121 percent of Chicago butter in January 1953, and remained at that average level through October 1953 (table 6 and fig. 3).

When the analysis is restricted to the first 10 months in each year for comparison purposes (the survey ended October 31, 1953), the deterioration of the sweet cream market after 1952 is emphasized by the following tabulation:

January-October of year	Ratio of price of Grade A butter in Chicago to weighted average price for sweet cream
1951	126.4
1952	127.0
1953	121.0

Not only did the average price of sweet cream drop sharply in 1953, but the range in monthly prices was much narrower than in previous years, as shown below:

Year	Range in ratio numbers of price of Grade A butter in Chicago to weighted average price for sweet cream
1951	123 to 129 (6 point range)
1952	124 to 131 (7 point range)
1953	119 to 123 (4 point range)

One factor prompting industry interest in a regular cream price series was the belief that there was no steady or predictable relationship between the Chicago butter market and cream prices in this area. This seemed to be borne out by the fact that in 1951 the ratio between the two price series changed from month to month 10 out of 12 times. The same variability also held true throughout 1952. However, beginning in

Table 6.- Average prices received for sweet cream by six-firm group compared with USDA price for Grade A butter at wholesale in Chicago, by months, January 1951-October 1953

Year and month	Price of Grade A butter, Chicago USDA quotation	Prices received by six-firm group for sweet cream 1/	Ratio of average price for sweet cream to price of butter at Chicago
	Cents	Cents	
1951			
January	69.8	86.0	123
February	68.9	86.3	125
March	66.7	85.0	127
April	66.5	84.5	127
May	69.5	86.4	124
June	68.2	85.8	126
July	66.7	85.9	129
August	66.4	85.5	129
September	67.0	85.7	128
October	69.9	87.9	126
November	73.0	90.5	124
December	78.0	96.1	123
Average	69.2	87.1	126
1952			
January	79.3	99.3	125
February	83.5	103.2	124
March	73.0	95.6	131
April	70.0	89.9	128
May	68.4	86.7	127
June	68.8	87.1	127
July	71.0	89.4	126
August	72.8	91.6	126
September	72.6	92.6	128
October	71.0	90.7	128
November	69.2	87.7	127
December	67.1	83.2	124
Average	72.2	91.4	127
1953			
January	66.9	81.1	121
February	66.9	80.8	121
March	66.6	80.6	121
April	65.1	78.6	121
May	65.1	77.7	119
June	65.1	78.9	121
July	65.1	78.9	121
August	65.1	79.6	122
September	66.1	81.0	123
October	67.4	81.4	121
Average	65.9	79.9	121

1/ The weighted average price expressed as cents per pound of butterfat contained in the sweet cream.

In South-Central U. S., 1952-53

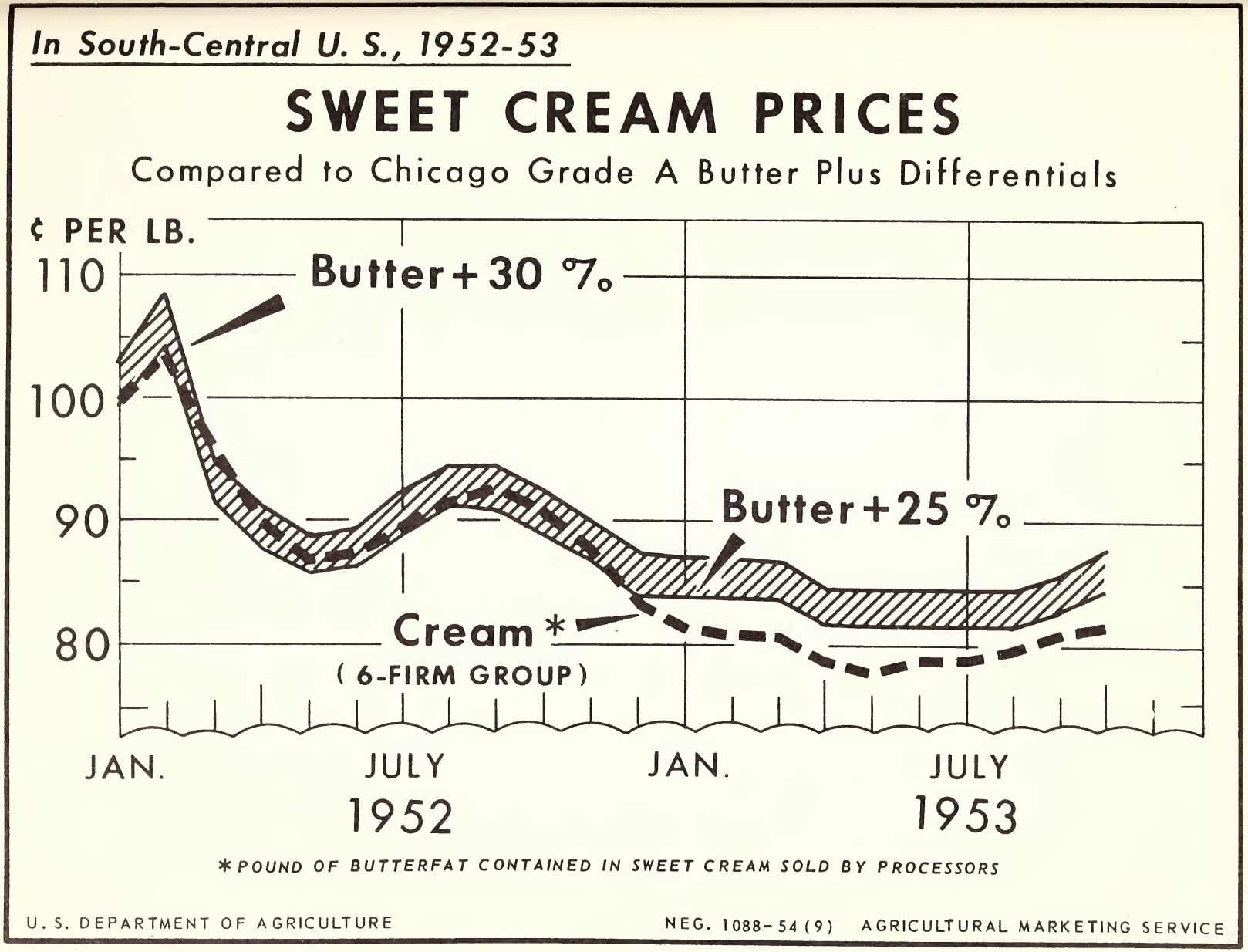


Figure 3.

1953 the ratio held steady (at 121) from January through July (with the exception of a dip to a low of 119 in May). Thus, the only period in which the cream price was predictable with a greater degree of accuracy occurred when Chicago butter prices were resting at or near government support price levels.

No one month had the highest ratio of cream prices to butter prices during the entire test period. September came the closest, being high month two times out of three. When the ratio numbers for each month are averaged 6/ for the purpose of determining in which months the cream price series ranked highest relative to butter at Chicago, the following results appear:

Months	Average ratio numbers of weighted average price for sweet cream to price of Grade A butter at Chicago, 1951-53
September and March	126.3
August	125.7
April and July	125.3
October	125.0
June	124.7
November	124.0
February and May	123.3
January	123.0
December	122.6

Price Structure for 40 Percent Sweet Cream and Other than 40 Percent

For all 19 firms, the monthly prices received for 40 percent sweet cream moved in close unison with those for all sweet cream (table 4). The same relationship did not hold true with sweet cream of other tests, however. The prices received for 40 percent sweet cream averaged about 2 3/4 cents a pound of butterfat more during the year than the prices received for sweet cream testing other than 40 percent. However, the difference is buried in the weighting process because 40 percent sweet cream constitutes the vast majority of sales.

Within the six-firm group there was no difference between the weighted average prices for 40 percent cream and for all sweet cream. The small quantities of other than 40 percent cream brought widely varying monthly average prices (due to the sporadic nature of the sales), yet the weighted average yearly price was within .8 cent of the price for 40 percent sweet cream. In other words, the same series could have been obtained from this six-firm group in 1951 by limiting the observations to

6/ November and December 1953 were assumed to equal 1953's average of 121.

40 percent sweet cream as resulted from expanding the sample to include all sweet cream and all sweet cream and "other cream" combined. This situation arises principally because over 99 1/2 percent of the sales were 40 percent sweet cream.

Price Structure for Sweet Cream and All Cream

In order to test the effect on the weighted average price series of including in it sales of all types and tests of cream (rather than just sweet cream), a separate analysis was made on a monthly basis. The difference in average prices received for sweet cream and other cream varied widely--from 14 cents a pound in August to less than 3 cents a pound in December. However, the weighted average price of sweet cream was reduced only one-tenth cent a pound of butterfat during 1951 by adding in all sales of "other cream." The most apparent effect occurred during months when flood conditions in parts of the area affected normal relationships. The relatively small effect of lower prices for "other cream" on the weighted average price is shown by the close relationship between prices for sweet cream and all cream in figure 4.

Price Structure of Sweet Cream in South Central Area and at Wholesale in Boston, Mass.

The only important published weighted average price series for sweet cream in the United States covers 40-quart cans of bottling-quality cream testing between 36 and 44 percent butterfat and shipped in bulk to the Boston marketing area by plants outside the jurisdiction of the Federal Milk Order governing the Greater Boston market. It is a weighted average price series calculated from audited purchase and sale invoices by the market administrator for the Boston market and the Massachusetts Milk Control Board. This price is reported regularly by the Market News Service of the U. S. Department of Agriculture, and is closely comparable with the price series constructed from the data obtained for this study.

As one would expect, the weighted monthly average price for sweet cream in Boston was higher than the price series constructed for the South Central area (table 4 and fig. 5). This spread in prices was highest in January (when it averaged 9.8 cents a pound) and decreased each month until September (when it averaged 4.4 cents a pound). The spread then widened each month after September, reaching 8.7 cents a pound in December.

On a weighted average basis for 1951, butterfat in sweet cream was worth 95.2 cents a pound in Boston and 86.6 cents a pound in this area--a difference of 8.6 cents a pound. If the difference between the two price series each month is averaged, it equals 6.7 cents a pound--an indication that the series are based on larger quantities of cream during months of low price in the South Central area and during months of high price in the Boston area.

In South-Central U. S., 1951

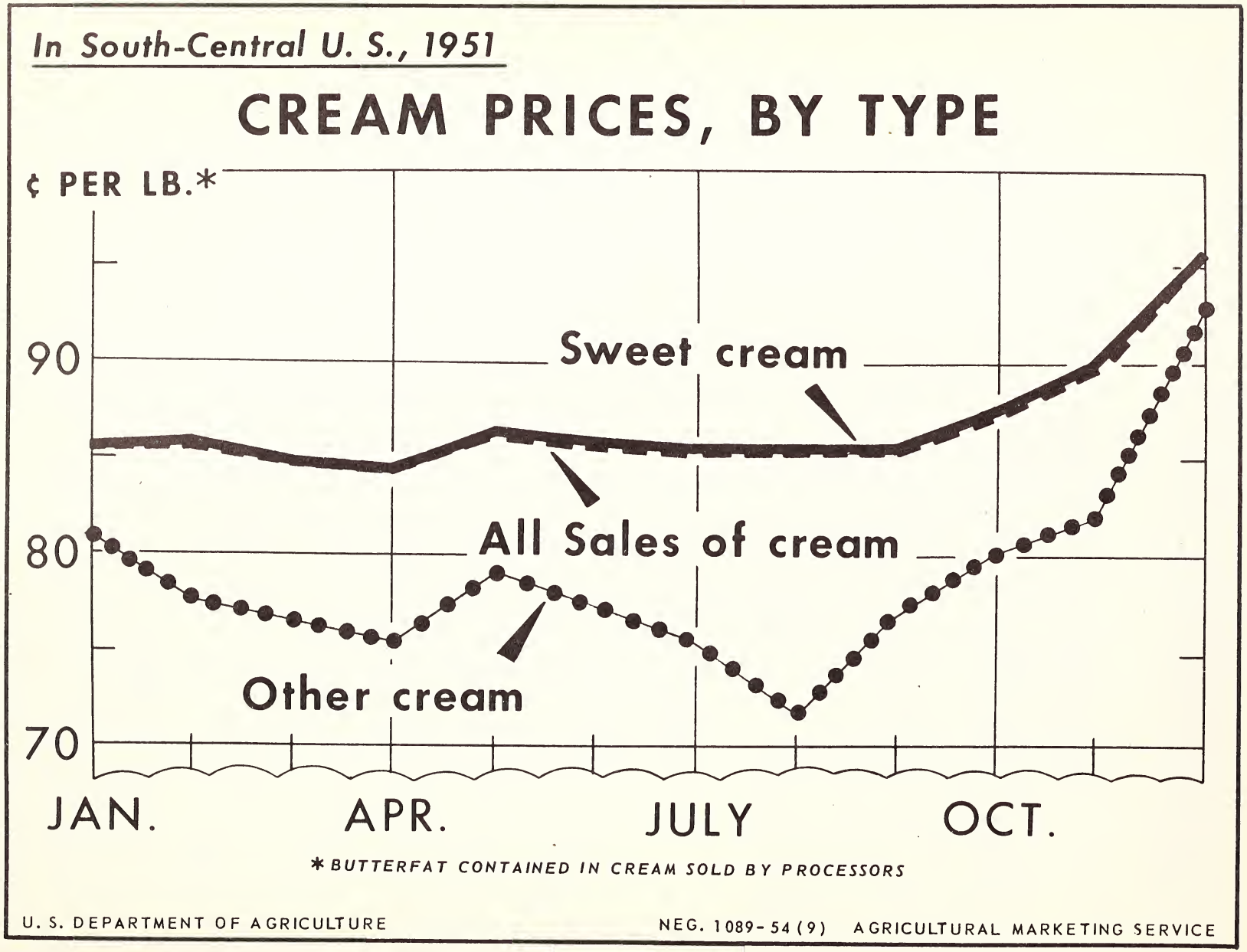


Figure 4.

In South-Central U. S., and Boston, Mass., 1951

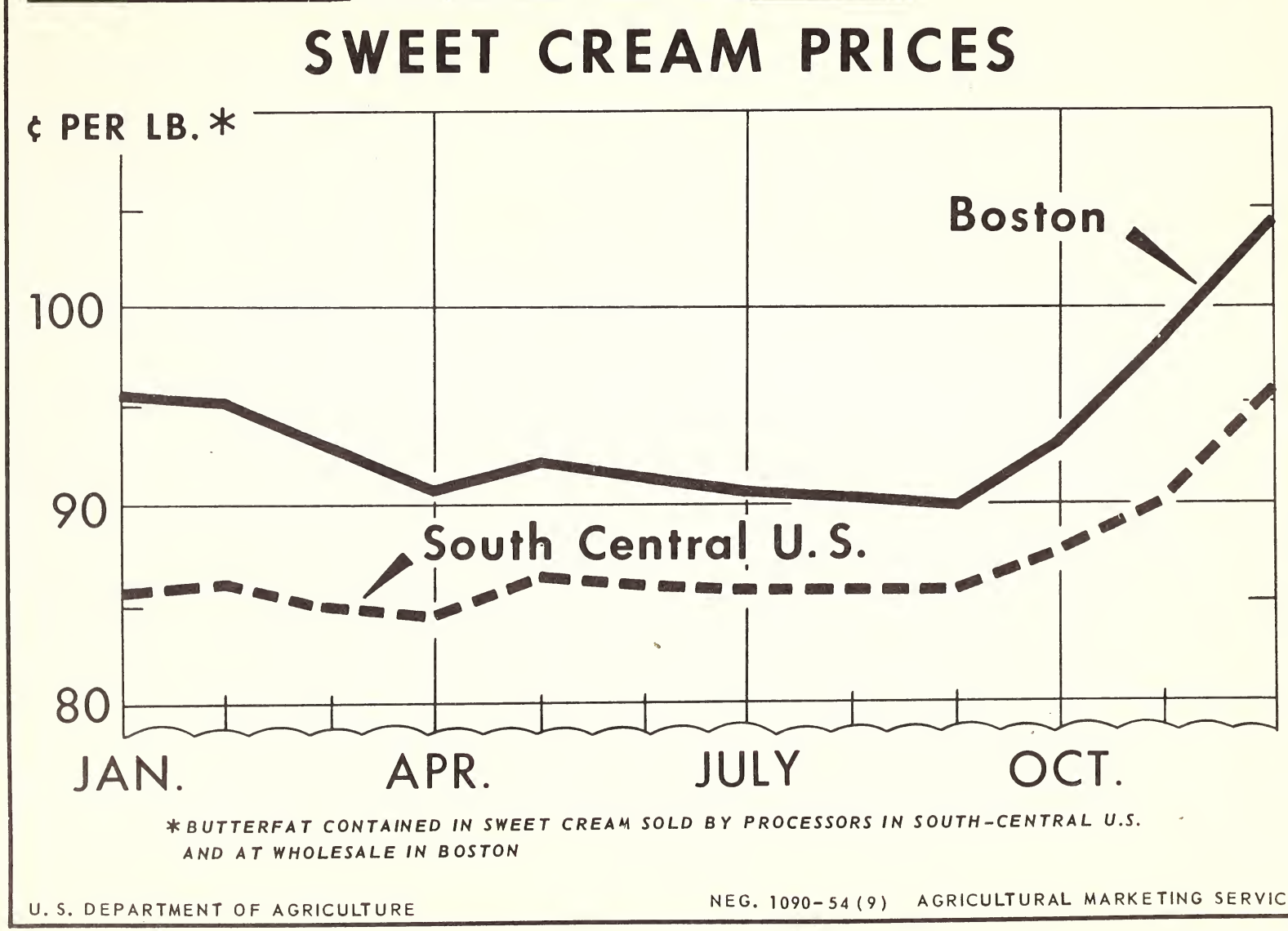


Figure 5.

WEIGHTED WEEKLY AND DAILY AVERAGES OF PRICES RECEIVED FOR SWEET CREAM

Weekly Average

Many persons concerned with the marketing and pricing of milk and milk products in the South Central area expressed an interest in some type of regular market news report on current values for sweet cream throughout the local area. The most common suggestions was that such conditions be reported weekly. They felt such a weekly report not only would supply information on current market values, but might be suitable as a basis, or alternative basis, for pricing the butterfat component of reserve and surplus milk. To test the practicability and character of such a report, the data obtained by this survey were regrouped to simulate a market news report covering each 5-day week during 1951 for all sales of sweet cream and 40 percent sweet cream. The results are presented in table 7 and figure 6.

Two facts are disclosed by these data: (1) The weighted average price for sweet cream varied from week to week by as much as 2 cents a pound of butterfat. (2) Not only did the price series lose part of its smoothness when broken down from a monthly to a weekly basis, but in individual weeks the weighted average price for sweet cream moved in the opposite direction from butterfat values reflected by the Chicago butter market. Some of the variability of the weekly price series was caused by the presence in or absence from the market of certain firms whose prices varied widely from the usual market pattern. This effect could be minimized by including in any price series only those firms that are regular sellers of cream (such as those in the six-firm group).

Daily Average

The weighted average price series on a daily basis is presented in figure 7 and table 8 to illustrate the extreme variability underlying the series before being "smoothed out" by weekly and monthly averagings. The fact that the daily average prices fluctuate so widely indicates in part the differences among the prices charged by individual sellers. Not all sellers make sales every day. Thus, if most of the sales on one day are made by sellers who customarily obtain higher prices, the weighted average price jumps upward; if more of the sales on another day are made by sellers who usually receive lower prices, the weighted average price moves sharply downward.

The important point to remember with regard to this variability on a daily basis is that the price level of each seller has not necessarily changed in unison with the daily average—rather, certain sellers make the sizable sales one day and other sellers make the sizable sales another day. By averaging the returns over a period of a week the different types of sellers are more completely represented, and the average price is partially stabilized, and by averaging returns over a month the price level is stabilized even more.

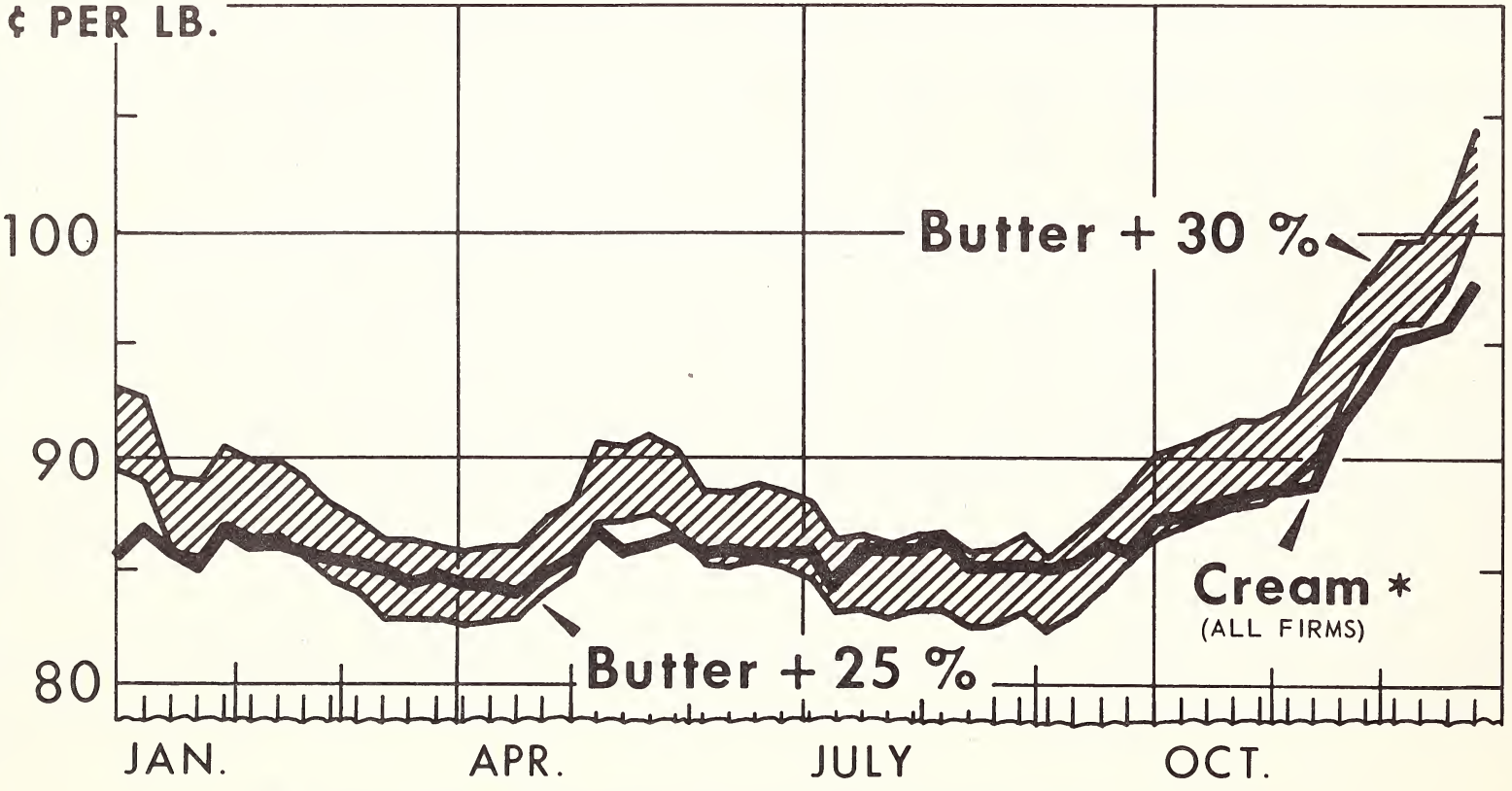
Table 7.- Weighted average price received for specified types of sweet cream and average price of Grade A butter, Chicago, plus 25 and 30 percent, by weeks, 1951

Item	Jan. 2-Jan. 5	Jan. 8-Jan. 12	Jan. 15-Jan. 19	Jan. 22-Jan. 26	Jan. 29-Feb. 2	Feb. 5-Feb. 9	Feb. 12-Feb. 16	Feb. 19-Feb. 23	Feb. 26-Mar. 2	Mar. 5-Mar. 9	Mar. 12-Mar. 16	Mar. 19-Mar. 23	Mar. 26-Mar. 30
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Sweet cream . .	85.7	87.0	85.8	85.1	86.8	86.1	86.2	85.8	85.6	85.3	85.0	84.6	84.9
40 percent cream	86.0	87.1	85.8	85.1	86.9	86.2	87.3	86.1	85.6	85.2	85.1	84.8	85.0
Butter x 125 . .	89.5	89.0	85.8	85.6	87.1	86.4	86.5	85.7	84.6	84.1	82.9	82.9	82.9
Butter x 130 . .	93.1	92.6	89.2	89.0	90.6	89.9	89.9	89.1	88.0	87.4	86.3	86.3	86.2
	Apr. 2-Apr. 6	Apr. 9-Apr. 13	Apr. 16-Apr. 20	Apr. 23-Apr. 27	Apr. 30-May 4	May 7-May 11	May 14-May 18	May 21-May 25	May 28-June 1	June 4-June 8	June 11-June 15	June 18-June 22	June 25-June 29
Sweet cream . .	84.5	84.5	84.2	84.9	85.6	86.8	86.0	86.3	86.7	85.7	85.9	85.8	85.8
40 percent cream	84.5	84.5	84.3	85.0	85.7	86.9	86.0	86.3	86.9	85.7	86.0	85.8	85.8
Butter x 125 . .	82.6	82.8	82.9	84.0	84.8	87.2	87.2	87.5	86.9	85.3	85.2	85.3	85.2
Butter x 130 . .	85.9	86.1	86.2	87.3	88.1	90.7	90.6	91.0	90.4	88.7	88.6	88.8	88.6
	July 2-July 6	July 9-July 13	July 16-July 20	July 23-July 27	July 30-Aug. 3	Aug. 6-Aug. 10	Aug. 13-Aug. 24	Aug. 20-Aug. 24	Aug. 27-Aug. 31	Sept. 4-Sept. 7	Sept. 10-Sept. 14	Sept. 17-Sept. 21	Sept. 24-Sept. 28
Sweet cream . .	85.9	84.4	86.1	86.1	86.1	86.5	85.2	85.2	85.3	85.1	85.4	86.3	85.8
40 percent cream	86.1	84.4	86.2	86.3	86.5	86.9	85.2	85.4	85.3	85.1	85.5	86.3	85.9
Butter x 125 . .	84.7	83.2	83.3	82.9	83.2	83.3	82.5	82.6	83.2	82.3	83.0	84.2	85.3
Butter x 130 . .	88.1	86.5	86.6	86.2	86.5	86.7	85.8	85.9	86.6	85.6	86.4	87.5	88.7
	Oct. 1-Oct. 5	Oct. 8-Oct. 12	Oct. 15-Oct. 19	Oct. 22-Oct. 26	Oct. 29-Nov. 2	Nov. 5-Nov. 9	Nov. 13-Nov. 16	Nov. 19-Nov. 23	Nov. 26-Nov. 30	Dec. 3-Dec. 7	Dec. 10-Dec. 14	Dec. 17-Dec. 21	Dec. 24-Dec. 28
Sweet cream . .	87.4	87.6	88.0	88.3	88.6	88.6	89.5	91.6	93.1	95.1	95.4	95.9	97.8
40 percent cream	87.4	87.6	88.0	88.3	88.6	88.6	89.7	91.6	93.1	95.1	95.4	95.9	97.8
Butter x 125 . .	86.5	87.0	87.5	87.9	88.0	88.7	90.7	92.7	94.3	95.8	95.9	97.3	100.4
Butter x 130 . .	90.0	90.5	91.0	91.5	91.5	92.2	94.4	96.4	98.1	99.6	99.7	101.2	104.4

In South-Central U. S., 1951

WEEKLY SWEET CREAM PRICES

Compared to Chicago Grade A Butter Plus Differentials



* POUND OF BUTTERFAT CONTAINED IN SWEET CREAM SOLD BY PROCESSORS

U. S. DEPARTMENT OF AGRICULTURE NEG. 1091-54 (9) AGRICULTURAL MARKETING SERVICE

Figure 6.

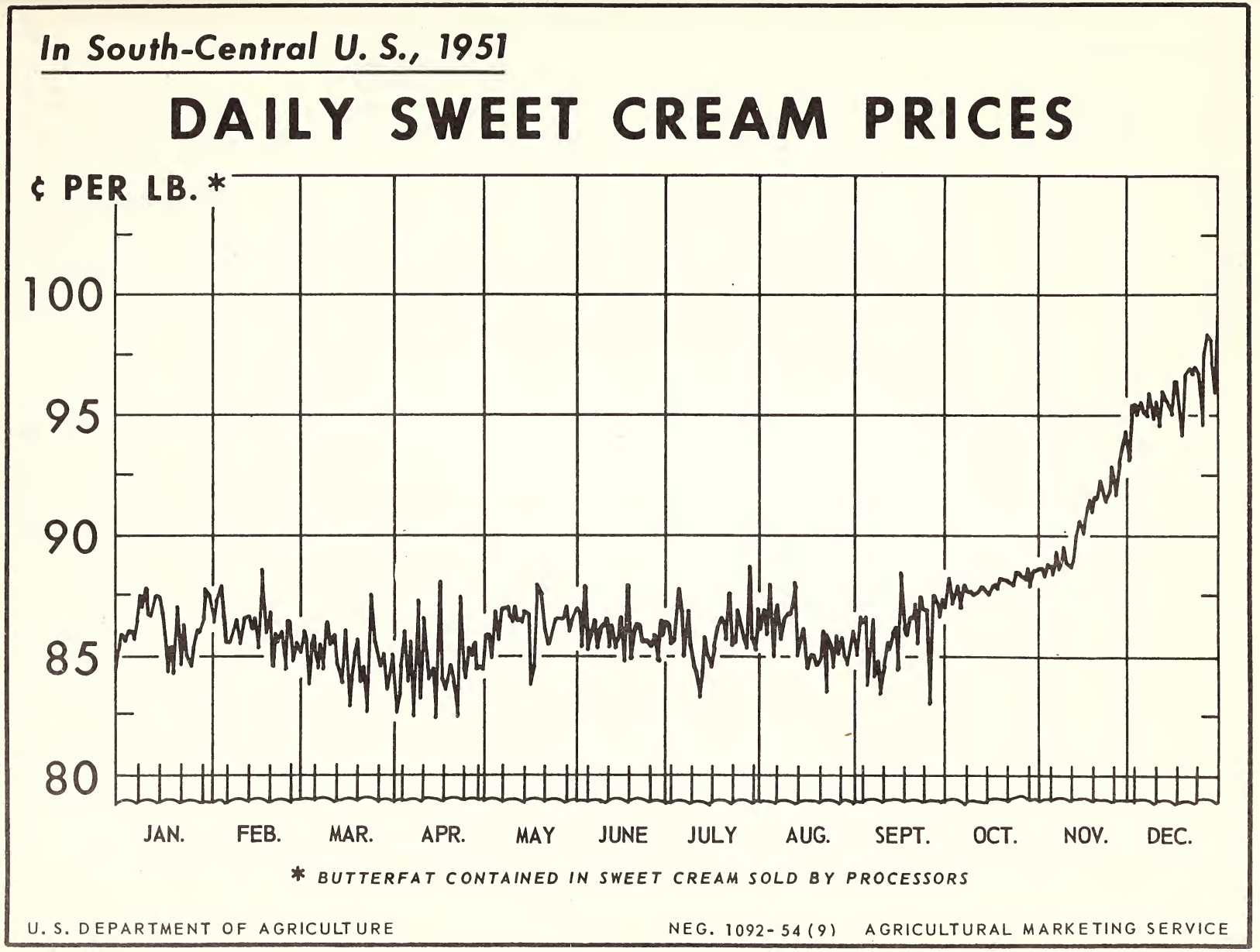

In South-Central U. S., 1951
DAILY SWEET CREAM PRICES
¢ PER LB.*
100
95
90
85
80
JAN.
FEB.
MAR.
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
NOV.
DEC.
* BUTTERFAT CONTAINED IN SWEET CREAM SOLD BY PROCESSORS
U. S. DEPARTMENT OF AGRICULTURE
NEG. 1092-54 (9) AGRICULTURAL MARKETING SERVICE

Figure 7.

Table 8.- Weighted average price received by all sellers for each pound of butterfat sold in sweet cream, South Central area, by days, 1951

Date	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Unknown	82.0	83.5	84.2	85.1	87.5	87.2	83.6	84.8	82.4	81.3	84.3	92.3
1	84.4	86.3	85.2	82.7	85.9	86.8	86.3	86.0	85.0	86.9	88.7	93.2
2	85.3	87.3	86.0	83.7	85.9	85.4	85.4	87.0	86.6	88.3	88.8	95.3
3	85.9	87.7	85.6	84.5	84.8	87.9	85.7	85.8	86.3	87.1	88.3	95.4
4	85.6	88.0	83.9	86.0	86.9	85.2	87.9	88.1	86.7	87.5	88.9	94.9
5	86.1	86.6	85.4	84.0	85.7	85.9	86.9	85.0	83.8	87.9	88.7	95.5
6	86.0	85.7	86.0	85.6	87.0	86.5	85.0	86.9	86.6	87.0	88.8	95.1
7	85.6	85.6	85.1	82.6	87.0	85.4	86.9	87.1	84.1	87.9	88.3	95.0
8	86.5	86.1	84.6	87.4	87.1	86.1	85.5	85.7	84.8	87.7	88.7	95.9
9	87.6	86.5	85.5	83.2	86.7	86.3	84.6	86.3	83.5	87.6	89.3	94.8
10	87.0	85.6	84.4	86.5	86.5	86.6	84.3	86.8	84.7	87.5	88.6	95.6
11	87.8	86.4	86.5	84.8	87.1	85.3	83.4	86.7	85.5	87.6	88.8	94.5
12	86.7	86.6	85.4	84.1	86.5	86.3	84.4	88.2	85.2	87.7	89.6	95.9
13	86.6	86.7	85.9	84.4	86.6	85.3	85.8	85.0	85.8	87.9	88.9	95.5
14	87.6	86.1	84.7	82.4	86.4	86.0	85.1	86.2	86.2	87.7	88.7	95.3
15	87.6	86.5	84.4	88.2	86.8	86.7	84.7	84.5	84.4	87.6	90.0	95.0
16	86.8	85.3	84.0	84.2	86.7	84.8	85.4	84.9	88.6	88.5	90.6	96.3
17	85.5	88.7	86.2	83.7	86.7	88.1	86.2	85.0	86.2	88.0	90.0	96.3
18	84.4	87.2	82.9	84.0	84.0	84.9	86.6	85.0	85.9	87.8	90.6	95.7
19	85.4	86.0	84.3	84.7	84.6	86.4	86.4	84.5	86.6	88.3	91.5	94.1
20	84.3	86.8	85.1	83.9	88.0	86.4	85.7	84.9	86.4	88.1	90.9	96.5
21	87.1	84.6	85.7	82.7	87.6	85.7	87.6	86.0	87.1	88.0	91.6	96.8
22	84.7	86.0	84.0	87.6	86.2	85.7	85.3	83.6	85.4	87.9	91.5	96.4
23	86.3	85.5	84.6	84.5	85.5	85.7	85.6	85.9	87.7	88.6	92.3	97.0
24	85.0	86.1	82.7	84.2	85.7	85.4	86.8	85.4	86.9	88.6	91.4	96.6
25	84.6	84.4	87.5	85.4	86.7	85.7	86.5	84.5	86.9	88.4	91.8	94.5
26	85.3	86.6	85.6	85.0	86.7	86.0	85.7	85.8	83.1	88.2	92.8	97.7
27	86.2	84.8	85.1	85.6	86.7	84.8	85.3	85.0	87.6	88.7	91.6	98.3
28	85.9	85.5	84.6	84.5	87.1	86.4	89.0	85.8	87.2	87.9	93.2	98.2
29	86.6		85.1	84.6	86.2	85.9	85.7	84.9	86.6	88.5	93.8	97.2
30	87.8		83.6	84.5	86.6	86.4	85.2	84.5	87.3	88.5	94.3	95.9
31	87.5		85.1		87.1		87.0	86.1		88.6		99.2
Wtd. av.	85.7	86.0	84.9	84.3	86.3	85.9	85.6	85.6	85.6	87.5	90.0	95.8

THE PRICE STRUCTURE FOR SWEET CREAM

A knowledge of the existing marketing and pricing structure for sweet cream in the area should enable interested persons to determine whether local conditions are compatible with and can be reflected by a continuing price series. Prices may be affected by which plant makes the sale, the type of buyer, the size of the individual purchase, the volume of business done with the seller, and related factors.

Monthly Average Prices Received by Individual Firms

Of unusual interest is the wide range in prices which the 19 selling firms were able to realize on sales of butterfat in sweet cream during 1951. A weighted average of the prices received from all sales by each firm each month was calculated (table 9 and appendix table 23). The firm with the highest returns in an average month received about 12 cents more for each pound of butterfat sold in the form of sweet cream than did the firm with the lowest returns. In November the range in prices received was widest, more than 17 cents a pound of butterfat, while the narrowest range in prices received was in April, about 8 cents a pound.

This wide range in prices received is subject to some distortion--certain firms had occasional sales in small quantities at prices which were 5 cents to 10 cents a pound above or below a "normal" market price. When such sales constituted a sizable portion of that firm's business in a particular month, its weighted average price, relative to other sellers, rose or fell sharply in response. Since most of the "occasional" sales at unusual prices were of cream of widely varying butterfat tests, the average range in prices is narrowed from 12.3 cents to 10.3 cents by analyzing only the returns to all firms from sales of 40 percent sweet cream (table 9 and appendix table 24).

One other distortion is present in these data. During months when the general market price level rose or fell rather sharply, the weighted monthly average return to a particular seller was influenced greatly by the position of the market at the time sales were made relative to the position of the market when other sellers made sales. Of course, this tendency is offset to a degree when a firm spreads its sales over most of the days in a month.

Among the six-firm group, those with the highest weighted average price each month received about 5 cents a pound more for butterfat than did those with the lowest price. Although the range widened to 7 cents a pound in April and narrowed to 2 cents a pound in October, it stayed between 4 and 6 cents a pound 9 months of the year. Of some significance is the almost steady level of prices realized by the highest-return

Table 9.- Range in weighted monthly average prices received for each pound of butterfat sold in sweet cream, by individual firms, by months, 1951

Number of firms	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
All sweet cream												
All sellers												
High	90.0	94.8	88.4	88.7	93.1	91.3	93.5	94.6	95.0	95.0	99.1	98.5
Low	80.4	80.0	80.0	80.5	83.7	81.9	80.6	79.2	78.1	79.8	81.5	88.7
Difference	9.6	14.8	8.4	8.2	9.4	9.4	12.9	15.4	16.9	15.2	17.6	9.8
Six-firms												
High	88.2	88.6	88.4	88.7	88.5	88.7	88.5	88.7	89.0	88.8	92.3	97.1
Low	84.6	84.6	81.9	81.6	84.5	83.6	82.2	82.0	82.8	86.8	88.2	92.1
Difference	3.6	4.0	6.5	7.1	4.0	5.1	6.3	6.7	6.2	2.0	4.1	5.0
40 percent sweet cream												
All sellers												
High	89.6	94.8	88.4	88.7	88.5	91.3	93.5	94.6	95.0	88.8	99.1	97.9
Low	83.0	83.0	80.0	81.6	83.2	77.9	81.8	82.0	82.8	79.9	84.0	87.4
Difference	6.6	11.8	8.4	7.1	5.3	13.4	11.7	12.6	12.2	8.9	15.1	10.5
Six-firms												
High	88.2	88.6	88.4	88.7	88.5	88.7	88.5	88.7	89.0	88.8	92.2	97.1
Low	84.6	84.6	81.9	81.6	84.5	83.6	82.2	82.0	82.8	86.8	88.2	92.1
Difference	3.6	4.0	6.5	7.1	4.0	5.1	6.3	6.7	6.2	2.0	4.0	5.0

sellers during the 10 months of January through October, 1951 (fig. 8). Thus, the range in prices received by the six-firm group in 1951 was largely determined by the pricing decisions of the firms at the bottom part of the price range.

Based on recent data from the six-firm group, the range in prices received widened in 1952 (from 5 to 6 3/4 cents a pound of butterfat) and narrowed considerably in 1953 (to about 4 cents). In 1951 the widest range in prices during any month was 7.1 cents a pound; in 1952 the range in monthly prices was 7 cents or more in 7 out of 12 months (and was 10.7 cents in March). During January-October 1953 the widest difference between the high and low prices received for cream was 6.1 cents a pound of butterfat (in March) and the narrowest range was 2.2 cents (in August). Contrary to indications for 1951, the range in prices received during 1953 was influenced most by the pricing decisions of the firms at the top of the price range rather than those at the botton (table 10). During the 1951-53 period the high-return seller each month always was one of two firms (except that it was one of three in 1951) and the low-return seller was one of three firms (two in 1951).

Among all 19 firms, the relative positions of individual plants, based on weighted average prices received, shifted frequently. The result was that no firm was either high-return seller or low-return seller for each month in the year. The entire range of weighted average prices for each month is detailed in tables 23 and 24 in the appendix.

Prices Received by Individual Firms During Selected Periods

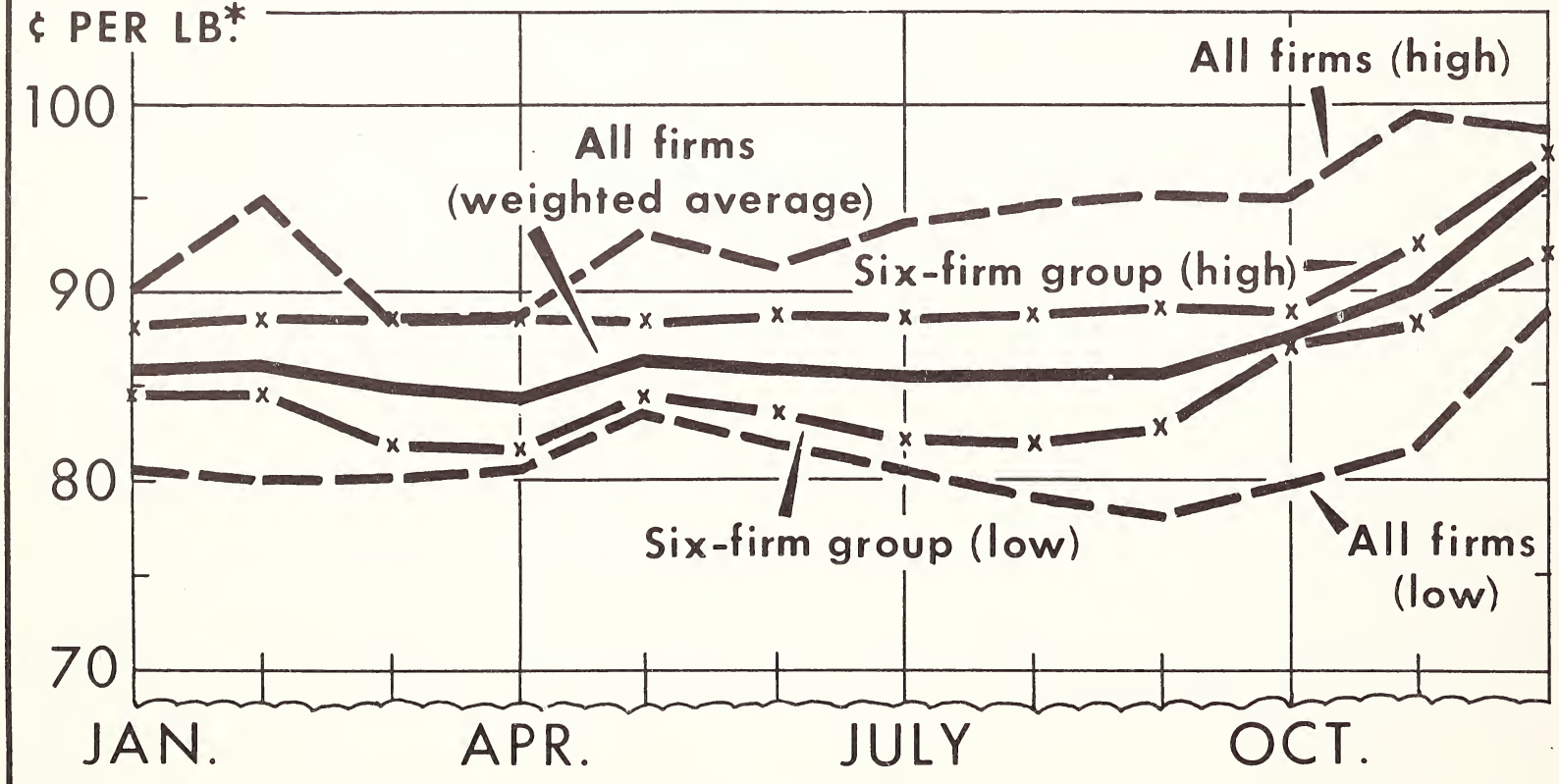
During the periods when basic marketing conditions and the level of butter prices at Chicago remain fixed, it is likely that any differences in prices among firms will reflect differences in pricing policy more accurately than when butter prices are fluctuating. (See discussion in preceding section.)

One method of eliminating the effect of fluctuating butter prices was to choose the day in each month when the greatest number of sales took place and examine each transaction of each selling firm to discern the true price levels. It was found in this analysis that on any of the selected days in 1951 the range in prices received by individual firms averaged 9 1/2 cents a pound of butterfat between the highest-return seller and the lowest-return seller (table 11). This range is about the same as the range in monthly average prices.

The chance of isolating a true price surface by this method was lessened by the fact that only about one-half of the firms actually made sales on any of the selected days in 1951. The highest proportion of firms making sales on a selected day was in July and August (11 out of 19). In March only 8 firms made sales on the most active trading day.

In South-Central U. S., 1951

RANGES IN MONTHLY SWEET CREAM PRICES



*BUTTERFAT CONTAINED IN SWEET CREAM SOLD BY PROCESSORS

U. S. DEPARTMENT OF AGRICULTURE NEG. 1093-54 (9) AGRICULTURAL MARKETING SERVICE

Figure 8.

Table 10.- Range in weighted average price per pound received for butterfat sold in cream, by plants in 6-firm group, by months, January 1951-October 1953

Year and month	Average price per pound		
	Highest	Lowest	Difference
	Cents	Cents	Cents
1951			
January	88.2	84.6	3.6
February	88.6	84.6	4.0
March	88.4	81.9	6.5
April	88.7	81.6	7.1
May	88.5	84.5	4.0
June	88.7	83.6	5.1
July	88.5	82.2	6.3
August	88.7	82.0	6.7
September	89.0	82.8	6.2
October	88.8	86.8	2.0
November	92.3	88.2	4.1
December	97.1	92.1	5.0
Average			5.05
1952			
January	101.8	94.8	7.0
February	106.9	99.5	7.4
March	101.7	91.0	10.7
April	95.1	85.7	9.4
May	92.2	83.8	8.4
June	89.8	85.0	4.8
July	91.5	87.6	3.9
August	93.2	90.2	3.0
September	95.4	90.2	5.2
October	94.9	87.7	7.2
November	92.4	85.1	7.3
December	87.1	80.7	6.4
Average			6.73
1953			
January	85.3	79.4	5.9
February	85.2	79.4	5.8
March	84.9	78.8	6.1
April	81.5	77.3	4.2
May	80.6	77.1	3.5
June	80.8	77.8	3.0
July	80.6	77.6	3.0
August	80.8	78.6	2.2
September	82.1	79.4	2.7
October	84.2	79.4	4.8
Average			4.12

Table 11.- Range in weighted average price per pound received by firms which made sales of sweet cream on a selected day in each month, 1951

Rank of firm among sellers	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Highest	90.0	95.0	95.0	89.0	90.0	90.0	95.0	95.0	95.0	95.0	94.4	99.9
2	89.5	89.1	88.3	88.0	89.5	89.0	89.0	91.0	89.0	89.2	94.0	98.3
3	86.3	89.0	87.8	85.5	88.6	88.5	89.0	89.0	88.5	88.8	93.4	98.2
4	86.1	88.0	85.4	85.2	88.1	87.9	88.6	88.3	87.9	88.5	93.1	97.8
5	86.0	87.2	85.0	85.0	87.5	86.6	88.1	88.3	87.2	88.4	92.0	97.0
6	86.0	87.0	83.7	84.2	86.2	86.2	86.0	85.9	85.1	87.8	91.1	96.2
7	85.0	86.2	83.2	83.8	86.1	85.7	84.8	84.5	84.8	87.2	90.7	95.2
8	83.6	86.0	83.0	82.4	85.7	85.6	83.9	83.6	83.1	87.1	90.0	95.0
9	83.4	85.8		81.1	85.0	83.6	82.8	83.4	83.1	86.9	87.5	94.5
10					84.0	83.4	81.5	81.8				90.3
11							81.0	80.5				
12												
13												
14												
15												
16												
17												
18												
19												
Average												
Weighted	84.7	86.6	85.4	84.5	87.0	85.2	84.6	85.0	86.1	87.6	91.5	96.3
Simple	86.2	88.1	86.4	84.9	87.1	86.6	86.3	86.5	87.1	88.8	91.8	96.2

Price Surface During Selected 15-Day Periods

The second approach was to examine the prices for sweet cream during two 15-day periods when the USDA quotation for Grade A butter at wholesale in Chicago remained unchanged. One period was in the spring (April 4-18) and the other was during the fall (October 23-November 6). All sales of all sellers were tabulated to show the relationships during these periods. Here again it is assumed that when market influences remain relatively unchanged, the price relationships which prevail reflect unobscured pricing policies of individual firms.

A striking aspect of these data is the number of different prices at which sweet cream was sold and, more important perhaps, the wide range in these prices. Also, the range in prices alternately widened and narrowed with the change in seasons of the year. For example, prices for sweet cream sold by all firms had a range of 11 cents between the high-return seller and the low-return seller in the spring period and a "true" 7/ range of only 4 cents in the fall period. When related to the price of butter at Chicago, the significant sales were made at prices which ranged from 121 to 136 percent of Chicago butter in the spring period and 124 to 128 during the period in the fall of 1951 (table 12). This seasonal narrowing and widening of the range in prices coincides with the need to convert sizable quantities of sweet cream into butter in the spring, and little if any during the fall.

Another feature of the wide range in prices received during the spring period of stable butter prices is the failure of the quantities sold at each price to fall in a normal distribution around a central price. There was a concentration of sales at 81-82 cents per pound and another around 89-90 cents, an 8-cent-a-pound spread (fig. 9). These peaks in quantities sold occurred at prices which equalled 123 and 134 percent of the price of Grade A butter at Chicago (table 13). The existence of such a wide range in prices received, coupled with the fact that substantially equal quantities of sweet cream were sold at prices near each end of the range, appears to indicate an unusual marketing structure for sweet cream in this area. A full knowledge of the reasons for these situations would increase the chances for developing a sound pricing method fitted to local conditions.

Prices Associated with Size of Sale

A reasonable assumption is that a part of the variation in prices might be attributed to a general practice of granting price discounts to buyers of (1) large quantities at a single transaction or (2) large quantities by regular purchases of smaller quantities at each transaction.

7/ Data in table 12 indicate that the range in prices during the fall period was 16 cents a pound, but the "true" range is distorted because the data include 1 sale at a price about 7 cents below and two other small sales at prices 2 cents and 5 cents above the prevailing range in prices.

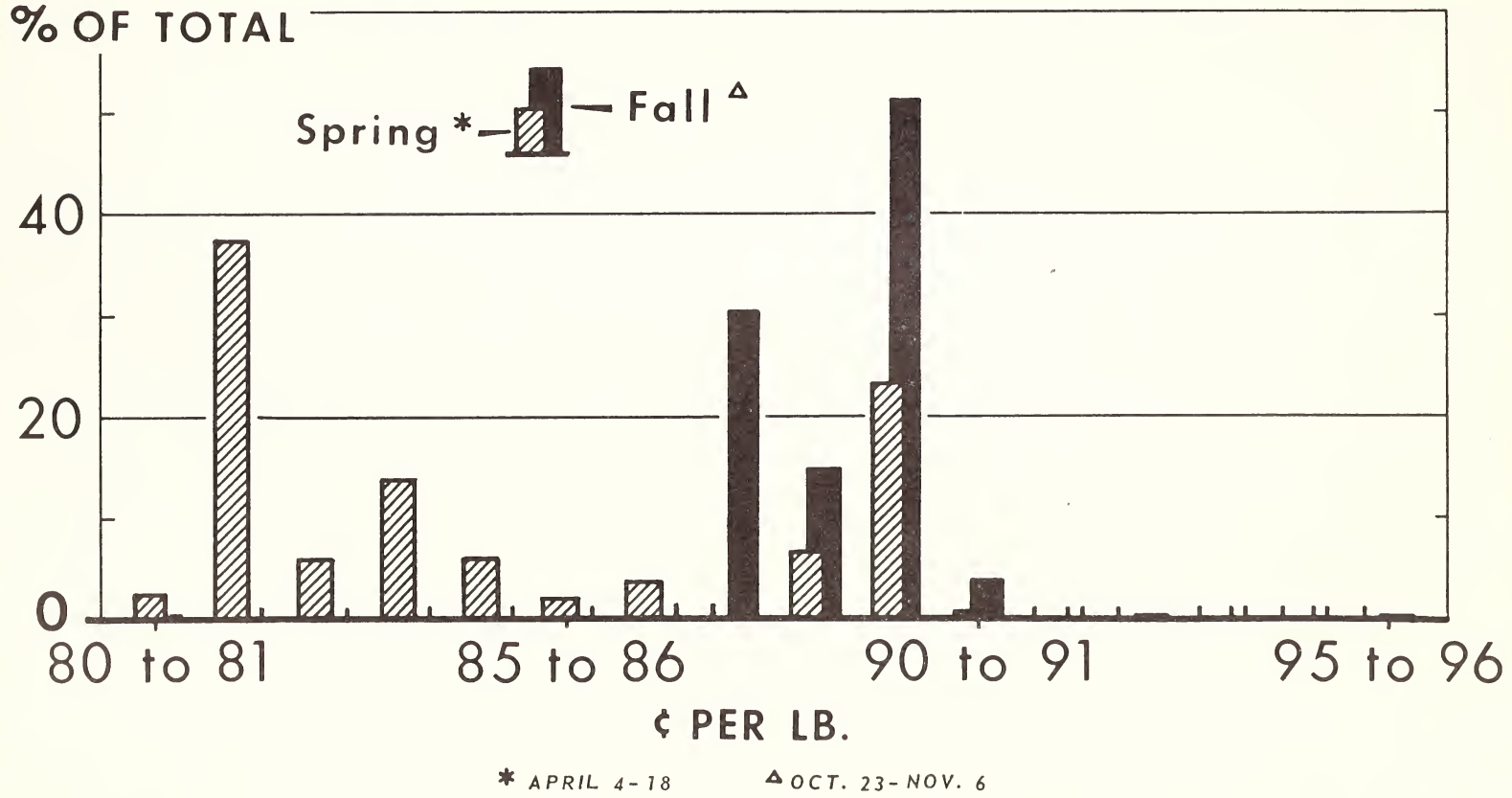
Table 12.- Butterfat sold as sweet cream by price received, all sellers April 4-18, 1951 and October 23-November 6, 1951

Price received per pound of butterfat	April 4-18			October 23-November 6		
	Butterfat sold		Percentage of USDA quotation for Grade A butter Chicago 1/	Butterfat sold		Percentage of USDA quotation for Grade A butter Chicago 1/
	Quantity	Percentage of total		Quantity	Percentage of total	
Cents	Pounds	Percent	Percent	Pounds	Percent	Percent
80.0	5,338	1.79	120.8	-	-	-
80.5	1,341	.46	121.5	-	-	-
80.7	-	-	-	656	0.28	114.7
81.2	72,999	24.50	122.6	-	-	-
81.8	37,696	12.65	123.5	-	-	-
82.5	17,120	5.75	124.5	-	-	-
83.1	6,663	2.24	125.4	-	-	-
83.3	14,073	4.72	125.7	-	-	-
83.4	8,320	2.80	125.9	-	-	-
83.5	1,728	.58	126.0	-	-	-
83.7	3,168	1.06	126.3	-	-	-
83.8	6,656	2.23	126.5	-	-	-
84.0	14,560	4.89	126.8	-	-	-
84.5	2,016	.68	127.6	-	-	-
85.0	5,792	1.94	128.3	-	-	-
85.5	64	.02	129.1	-	-	-
86.0	10,998	3.69	129.8	-	-	-
87.0	-	-	-	8,816	3.80	123.6
87.2	-	-	-	1,280	.55	123.9
87.3	-	-	-	6,240	2.69	124.0
87.5	-	-	-	28,984	12.48	124.3
87.8	-	-	-	24,700	10.63	124.8
88.0	19,002	6.38	132.8	10,684	4.60	125.0
88.1	-	-	-	10,112	4.36	125.2
88.2	-	-	-	5,280	2.27	125.3
88.7	-	-	-	8,448	3.64	126.0
89.0	68,893	23.12	134.3	90,392	38.93	126.5
89.1	-	-	-	7,137	3.07	126.6
89.5	-	-	-	2,604	1.12	127.2
89.7	-	-	-	12,560	5.41	127.5
89.8	-	-	-	5,280	2.28	127.6
90.0	1,504	.50	135.8	8,619	3.71	127.9
92.0	-	-	-	192	.08	130.7
95.0	-	-	-	241	.10	135.0
Total	297,931	100.00		232,225	100.00	

1/ Quoted unchanged at 0.6625.

In South-Central U. S., 1951

PROPORTION OF SWEET CREAM SOLD AT SPECIFIED PRICES



U. S. DEPARTMENT OF AGRICULTURE NEG. 1095-54 (9) AGRICULTURAL MARKETING SERVICE

Figure 9.

Table 13.- Butterfat sold as sweet cream at specified prices expressed as percentages of the price of Grade A butter, Chicago, selected periods, 1951

Weighted average price expressed as a percentage of USDA quotation for Grade A butter at Chicago	Butterfat sold as sweet cream			
	April 4-18		October 23-November 6	
	Quantity	Percentage of total	Quantity	Percentage of total
Percent	Pounds	Percent	Pounds	Percent
115	-	-	656	0.28
121	5,338	1.79	-	-
122	1,341	.45	-	-
123	72,999	24.50	-	-
124	37,696	12.65	45,320	19.52
125	23,783	7.98	50,776	21.86
126	33,945	11.39	98,840	42.57
127	14,560	4.89	13,725	5.91
128	7,808	2.62	22,475	9.68
129	64	.02	-	-
130	10,998	3.69	-	-
131	-	-	192	.08
133	19,002	6.38	-	-
134	68,893	23.13	-	-
135	-	-	241	.10
136	1,504	.51	-	-
Total	297,931	100.00	232,225	100.00

One method of determining how much of the variation in prices was associated with size of sale is to focus attention again on the two 15-day periods when the price of butter at Chicago remained unchanged. From this it appears that only a few buyers were given price reductions solely because of the size of sale involved. For example, during the 15-day test period in the fall, a total of more than 230,000 pounds of butterfat were sold to 125 buyers. Of these, price discounts were granted to only 8 buyers. However, they purchased about 23 percent of the total quantity sold. More than one-third of this quantity went to one buyer.

A study of the individual pricing decisions during both periods of stabilized butter prices may illustrate the situation best. During both periods one seller gave a discount of from one-sixth to three-fourths cent a pound of butterfat to a multiple-use plant whose purchases were 5 to 10 times as large as those of other buyers. During the spring a buyer who was not a regular customer paid 1 cent a pound more for for a single purchase of sweet cream. All other buyers paid the going price. Another seller followed a discount policy similar to that above in the spring, although sales in the fall were all at prices within a one-half-cent range.

One seller had a much more variable pricing policy than those described above. During the spring period this firm had: (1) a basic price to regular customers who bought small quantities (1-3 cans of cream each sale), (2) a regular 1 1/2 cents a pound premium from an out-of-area buyer, (3) a small percentage discount to two buyers who were members of a chain, and (4) a more substantial discount to brokers whose activities supplied at least four buyers. By the fall season the range in prices narrowed to 1 cent a pound, except that the two buyers mentioned in (3) above still received their regular percentage discount.

Two sellers maintained fixed prices during both periods to all buyers, but made occasional sales of a "dumping" nature to regular outlets with multiple-use facilities at 5 cents a pound less than the basic price level in the spring and 2 cents a pound less during the fall period. One of these firms made exceptions to its one-price policy during the spring period by selling to two regular and important buyers at a price between the basic and "dumping" levels.

Two other sellers also sold to all buyers at the same price regardless of size of sale, with a single exception in each case. One firm obtained a premium of one-half cent a pound in the spring from a non-regular buyer who used the cream for a special purpose, and the other firm gave a discount of 3 cents a pound to a buyer who was in a chain of operations and who purchased a carload lot. The latter firm gave the same buyer and another unit in the same chain a 1-cent discount in the fall, but made no other exceptions from the established price.

Another seller's prices were within a 1-cent range throughout both periods. The lower price seemed to apply to regular buyers (who, incidentally, seemed to buy in larger quantities), whereas the higher price applied to firms buying in lots of 1 and 2 cans or making only occasional purchases. The sole exception to this firm's pricing pattern was a sale in large quantity to a broker at 1 1/2 cents a pound less than the lower limit of the firm's prevailing price range.

Some firms made only occasional sales of cream. A company selling the "surplus" from its own fluid milk and ice cream operations received about 7 cents a pound less than other sellers got for sales of the same size during the fall period; other companies diverted butterfat to sweet cream to help buyers over a supply situation and received up to 6 cents a pound extra for such "accommodation" sales.

Prices Associated with Type of Buyer Using Monthly Average Prices

Another part of the variation in prices can arise because different buyers use the cream for different purposes. These end products, in turn, command different prices; thus, certain types of users can pay more for butterfat in sweet cream.

Two factors make it difficult to arrive at definite pricing relationships between types of buyers. The first difficulty arises in

classifying usage. The second arises (when the price level changes from day to day) because sales for different uses are made on different days. For example, many buyers can use sweet cream in several products. In this study there was no way to find out in which product any given lot of cream actually was used. However, the data as presented in tables 25 and 26 in the appendix reveal some important general relationships.

During 1951 ice cream manufacturers buying sweet cream from the 19 firms covered in this study paid an average of one-half cent a pound more than the weighted average price each month. Buyers with combined fluid milk and ice cream operations paid about .8 cent a pound more than the weighted average, whereas fluid milk plants (including those with multiple-use manufacturing facilities) paid an average of 2 3/4 cents more.

Multiple-use manufacturers, butter manufacturers, and brokers paid less than the weighted average price by amounts averaging up to slightly more than 1 1/2 cents a pound of butterfat. Although this range in prices paid below the weighted average is much narrower than the range in prices above the weighted average, the effect on price is balanced because brokers and multiple-use and butter manufacturers bought greater quantities than the buyers who paid more than weighted average price.

Prices Associated with Type of Buyer in Selected 15-day Periods

Although generalizing from aggregated data may reveal the basic underlying trends, definite differences between prices paid by types of buyers are obscured by the fact that the specific price in table 25 for each type of buyer is influenced by: (1) The day on which the purchase was made (relative to the level of prices on days when other types of buyers made purchases from the same seller), and (2) the level of prices charged by the selling firm (relative to prices charged by other selling firms). 8/

To lessen these distortions, the data were regrouped to permit an empirical analysis of the association between price and type of buyer during the two periods in 1951 when the price of butter at Chicago remained unchanged for 15 days. Although not all marketing and pricing situations occurred during these two test periods, none the less the data indicate some significant aspects of pricing policy related to type of buyer.

8/ For example, one cannot generalize on the association between type of buyer and buying prices if a Type A buyer purchased cream at a 1 cent discount when the market price is 90 cents whereas other types of buyers purchased their cream at the full market price when it was 85 cents. This difference of 4 cents a pound in buying prices represents a change in basic market conditions rather than differences in price associated with type of buyer. The same problem arises in comparing prices paid by Type A buyers purchasing from a high-return seller at the same time that other types of buyers are purchasing supplies from a low-return seller.

Seven of the 11 firms having sales in these 2 periods sold sweet cream at prices which varied as between buyers with different types of operations. Of these firms, three had sales to brokers at prices 2/3 to 2 cents a pound below the basic level. Also, one generally sold to ice cream manufacturers (which were regular outlets) at 1 cent less than the price to fluid milk-ice cream plants, although size of sale could have been a factor in some cases.

The only type of buyer (other than a broker) usually receiving discounts was the multiple-use manufacturer. Some of these multiple-use operations had facilities for manufacturing ice cream or ice cream mix. Four of the 11 firms studied made sales to such buyers during the two 15-day periods, and in each case at prices below the basic level. The reductions in price to two of the buyers (by two of the sellers) were modest, varying between one-sixth and three-fourths cent a pound of butterfat. Since the buyers could have used the cream in ice cream, and because the purchases were sizable and regular, it is conceivable that the price reductions resulted from the size and regularity of purchases as much as from the type of buyers.

Two multiple-use manufacturers purchased cream during the spring at about 5 cents a pound of butterfat less than the basic price level. By fall the number of such sales decreased markedly, and the price differential had narrowed to about 2 cents a pound. The quantities bought and the regularity (and, at times, irregularity) of sales to these manufacturers indicate that they served as "dumping grounds" for the sweet cream in excess of the sellers' needs or capacity. It seems reasonable to conclude, therefore, that a substantial part of this price differential was the cost to the sellers of having a ready outlet to balance supply, demand, and facilities.

RELATIONSHIP OF PRICES FOR REGULATED AND NONREGULATED SWEET CREAM

Because regulated manufacturers (handlers) compete with nonregulated manufacturers in the sale of most products made from reserve and surplus milk, the relationship between prices paid for milk by both types of processors becomes an important consideration. The data obtained for this report also are suitable for two analyses that bear on the competitive relationships between handlers and nonhandlers.

Prices Paid for Sweet Cream by Handlers and Nonhandlers

Handlers in this area have the alternative (at least in the longer run) of manufacturing ice cream from reserve or surplus (Class II) milk or from butterfat in sweet cream bought from nonregulated sellers. Handlers who purchased sweet cream as the source of either part or all of their requirements for butterfat in ice cream nearly always bought 40 percent sweet cream, and generally from sellers included in this survey.

During 1951 handlers in the Kansas City area paid an average of 3.8 cents a pound of butterfat less for 40 percent sweet cream under Federal Order No. 13 than the same butterfat would have cost f.o.b. seller's plant if purchased as cream at the weighted average price level (table 14 and fig. 10). Handlers under the Oklahoma City Federal Order paid an average of 6.3 cents a pound less; those under the Tulsa, Okla. Federal Order paid an average of 6 cents less. The yearly average conceals important seasonal variations in this spread, as can be noted from table 15.

It must be emphasized that the comparison just made used the price that handlers paid farmers for the butterfat and skim milk in 40 percent cream against the price paid processors for 40 percent cream at the weighted average price level. The distinction is that handlers, in addition to the price paid producers, will incur processing costs in converting milk into cream; these costs already are reflected in the weighted average price series. Furthermore, no allowance is made for the fact that after cream separation a handler will have the remaining skim milk for use in other products. The cost of this skim milk to a handler will vary, and he will incur costs in processing this skim milk. It was beyond the scope of this report to consider skim milk price relationships or the amount of costs incurred by a "typical" handler, but these prices and costs should be kept in mind in noting the changes that have taken place in the relationship between these two price levels during the last three years.

After 1951 the relationship can be compared only by using the weighted average cream price of the six-firm group (table 14 and fig. 11). Here again the same general relationships held true in 1952 as in 1951, with Kansas City handlers paying an average of about 4 1/2 cents a pound less than the weighted average price for butterfat in 40 percent cream. Also, Oklahoma City and Tulsa handlers continued to pay about 6 cents a pound less in 1952.

Conditions changed rapidly in 1953, however. In January, February, and October, for example, Kansas City handlers paid 1 cent a pound more than the weighted average cream price series. In addition, the average spread in price levels of 6.1 cents a pound from March through September of previous years was narrowed to 2.2 cents a pound in 1953. The same trends held true for handlers in Oklahoma City and Tulsa in 1953, indicating that handlers in the three cities had to pay about 3 cents a pound of butterfat more for cream, relative to the cream price series, than in 1951 and 1952.

Prices Received for Sweet Cream by Handlers and Nonhandlers

Another factor deserving consideration is the relationship between the prices received for sweet cream sold by plants grouped according to their status with respect to Federal milk pricing orders. Of the sweet cream sold by all plants included in this survey, 72 percent was sold by

Table 14.- Cost per pound of butterfat in 40 percent cream under the Federal Milk Orders regulating the Kansas City, Mo., Oklahoma City, Okla., and Tulsa, Okla. markets and the weighted average cream price of all firms and a six-firm group, by months, January 1951-October 1953 1/

Year and month	Cost per pound of butterfat				
	In 40 percent cream under Federal Milk Order in -			In sweet cream at weighted average price of	
	Kansas City	Oklahoma City	Tulsa	All firms	6 firms 2/
	Cents	Cents	Cents	Cents	Cents
1951					
January	85.8	80.8	81.5	86.0	86.0
February	85.0	79.9	80.7	86.1	86.3
March	79.2	77.7	78.5	84.9	85.0
April	78.6	77.4	78.2	84.4	84.5
May	81.5	80.7	81.2	86.4	86.4
June	80.1	79.6	79.9	85.9	85.8
July	78.5	78.0	78.4	85.7	85.9
August	78.0	77.7	78.0	85.7	85.5
September	82.2	78.4	78.7	85.7	85.7
October	85.6	81.4	81.7	87.8	87.9
November	89.2	85.7	85.3	90.4	90.5
December	95.2	91.6	90.9	95.8	96.1
Average	83.2	80.7	81.1	87.1	87.1
1952					
January	96.7	93.1	92.5		99.3
February	101.8	98.0	97.3		103.2
March	85.9	86.0	86.4		95.6
April	82.4	82.6	82.7		89.9
May	80.7	80.8	80.8		86.7
June	80.9	81.2	81.2		87.1
July	83.2	83.5	83.5		89.4
August	85.5	85.5	85.4		91.6
September	89.5	85.6	85.6		92.6
October	87.8	84.0	84.0		90.7
November	85.7	82.1	82.1		87.7
December	82.7	79.3	79.3		83.2
Average	86.9	85.1	85.1		91.4
1953					
January	82.1	78.6	78.7		81.1
February	81.9	78.1	78.1		80.8
March	78.1	77.5	77.5		80.6
April	76.3	75.7	75.7		78.6
May	76.2	75.5	75.5		77.7
June	76.2	75.5	75.5		78.9
July	76.2	75.5	75.5		78.9
August	76.2	75.5	75.7		79.6
September	80.8	76.6	76.7		81.0
October	82.4	78.1	77.7		81.4
Average	78.6	76.7	76.7		79.9

1/ These data make no allowance for handlers processing costs or the price-value relationship of the remaining skim milk.
2/ Based on all sales of sweet cream.

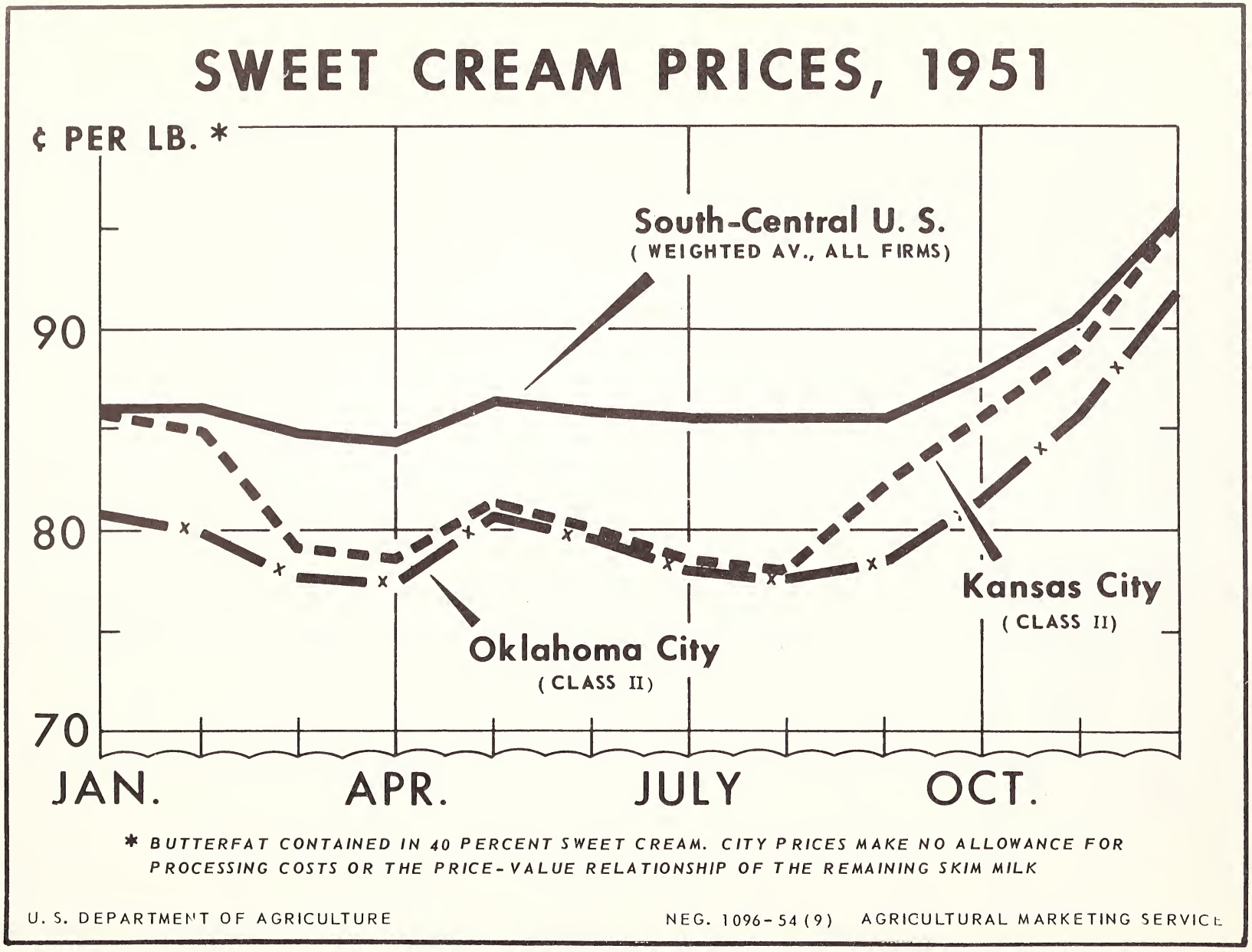

SWEET CREAM PRICES, 1951
¢ PER LB. *
90
80
70
South-Central U. S.
(WEIGHTED AV., ALL FIRMS)
Kansas City
(CLASS II)
Oklahoma City
(CLASS II)
JAN.
APR.
JULY
OCT.
* BUTTERFAT CONTAINED IN 40 PERCENT SWEET CREAM. CITY PRICES MAKE NO ALLOWANCE FOR PROCESSING COSTS OR THE PRICE-VALUE RELATIONSHIP OF THE REMAINING SKIM MILK
U. S. DEPARTMENT OF AGRICULTURE
NEG. 1096-54 (9) AGRICULTURAL MARKETING SERVICE

Figure 10.

Table 15.- Amount by which the price of a pound of butterfat in 40 percent cream at the weighted average price level exceeded charges under Federal milk orders regulating specified cities, by months, 1951 1/

Month	Kansas City	Oklahoma City	Tulsa
	Cents	Cents	Cents
January-February	0.65	5.7	4.95
March-April	5.75	7.1	6.30
May-June	5.35	6.0	5.60
July-August	7.45	7.85	7.50
September-October	2.85	6.85	6.55
November-December	.90	4.45	5.00
Yearly average	3.825	6.325	5.98

1/ These data make no allowance for handlers' processing costs or the price-value relationship of the remaining skim milk.

the 7 plants entirely unregulated by such orders, 25 percent was sold by the 7 plants having dual operations 2/, and the remaining 3 percent by 5 plants that were regulated as handlers under an order.

On a per plant basis, each nonregulated plant sold 10.3 percent of the total quantity of cream covered in this survey, each dual operation sold 3.6 percent, and each handler averaged only six-tenths of 1 percent of the total quantity sold. Handlers played a minor role in the sale of sweet cream in the South Central area, evidence that they are not, as a general rule, in business primarily to sell sweet cream to processors or end-users. Most of them use sweet cream in manufacturing their own ice cream and the quantities sold generally represent only surpluses.

Among the plants in this survey, no particular type of operation received either the highest or the lowest price for sweet cream sold each month in 1951 (table 16 and fig. 12). However, it is quite clear that in most months handlers had to sell cream for prices that averaged considerably less than those received by other sellers. On a yearly basis, handlers received 2.8 cents a pound less for butterfat in cream than did dual-operation plants and 2.2 cents less than nonregulated plants. Plants with dual operations received 0.6 cent a pound more than nonregulated plants. The firms that obtained the highest average price for the year and the highest monthly prices most often (7 of the 12 months) had dual operations--a Grade A fluid milk operation regulated by a Federal milk order and an ungraded milk operation not under regulation.

2/ A Grade A fluid milk operation regulated by a Federal milk order and an ungraded milk operation to process and sell various products, including 40 percent cream. This latter operation is not subject to Federal milk pricing orders.

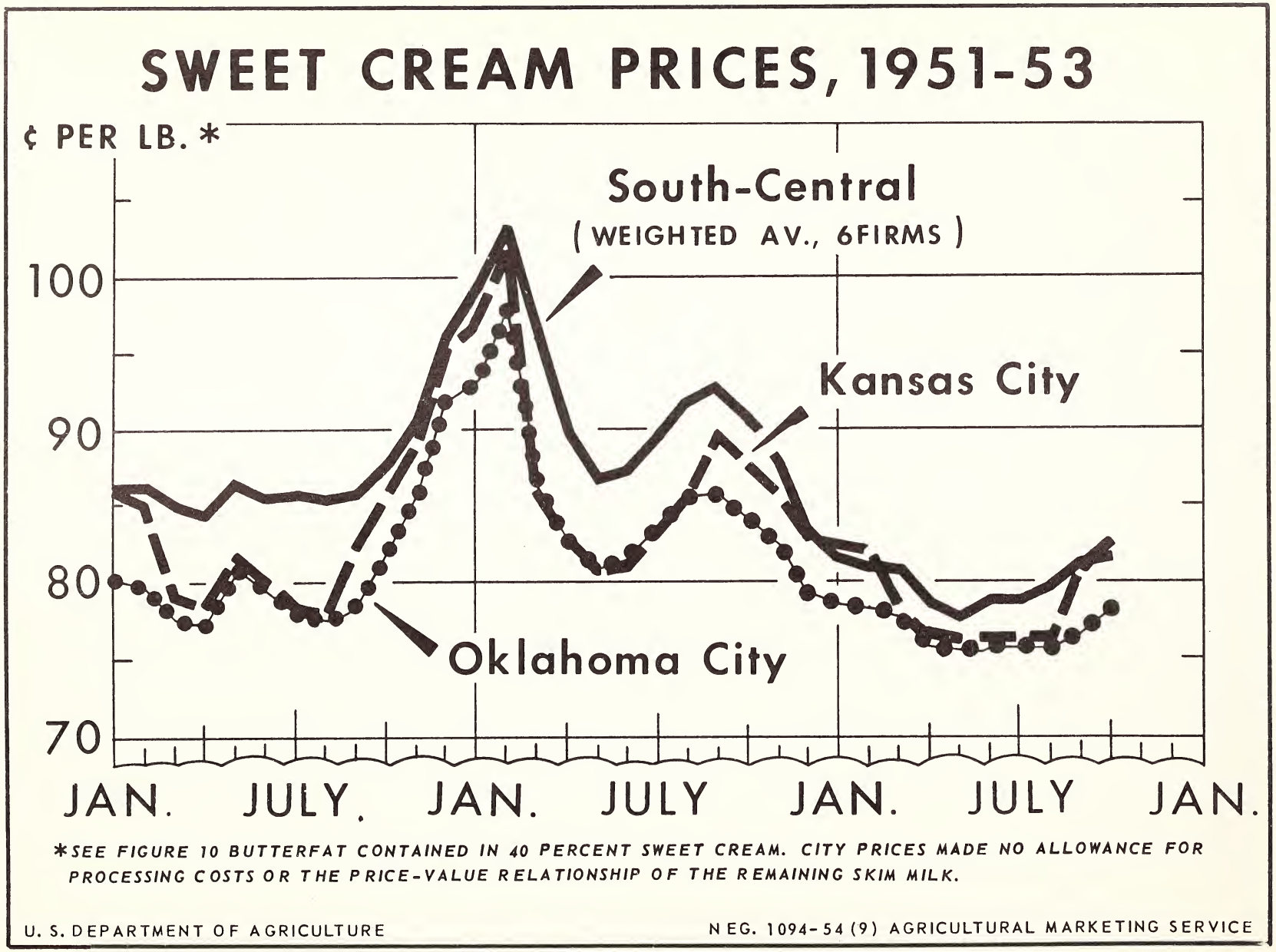

SWEET CREAM PRICES, 1951-53
¢ PER LB. *
South-Central
(WEIGHTED AV., 6FIRMS)
Kansas City
Oklahoma City
100
90
80
70
JAN.
JULY
JAN.
JULY
JAN.
JULY
JAN.
*SEE FIGURE 10 BUTTERFAT CONTAINED IN 40 PERCENT SWEET CREAM. CITY PRICES MADE NO ALLOWANCE FOR PROCESSING COSTS OR THE PRICE-VALUE RELATIONSHIP OF THE REMAINING SKIM MILK.
U. S. DEPARTMENT OF AGRICULTURE
NEG. 1094-54 (9) AGRICULTURAL MARKETING SERVICE

Figure 11.

Table 16.- Weighted average price per pound of butterfat in sweet cream received by plants grouped according to status under Federal Milk Orders, South Central area, by months, 1951

Month	Status of plant		
	Regulated and nonregulated, dual operation	No operations under regulation	Regulated as handlers under an order
	Cents	Cents	Cents
January	86.0	87.6	82.2
February	86.8	87.3	82.7
March	85.6	84.6	83.3
April	84.6	84.4	84.2
May	86.6	87.7	87.7
June	87.0	85.1	86.8
July	86.4	86.0	85.4
August	86.5	86.2	84.4
September	86.5	86.1	83.8
October	89.7	88.6	80.7
November	89.7	91.8	88.5
December	94.0	97.0	92.9
Average			
Weighted	87.5	86.9	84.7
Simple	87.4	87.7	85.2

Many factors influence the competitive relationships between plants in this survey and the level of prices they receive for sweet cream; hence it is not accurate to assume that the lower prices received by handlers is caused by, or necessarily related to, the fact they are required to pay farmers specified minimum prices for Grade A milk used in their fluid operations. Nonregulated fluid milk distributors probably are in about the same competitive position. When such distributors attempt to sell cream (which usually is their surplus), they enter a market with "distress" supplies and compete with sellers who stand ready to guarantee delivery of any quantities at any time. Naturally, they are in an unfavorable position. Some handlers regularly supplied certain buyers at favorable prices, but the quantities taken generally were small, and had to be accompanied with considerable services.

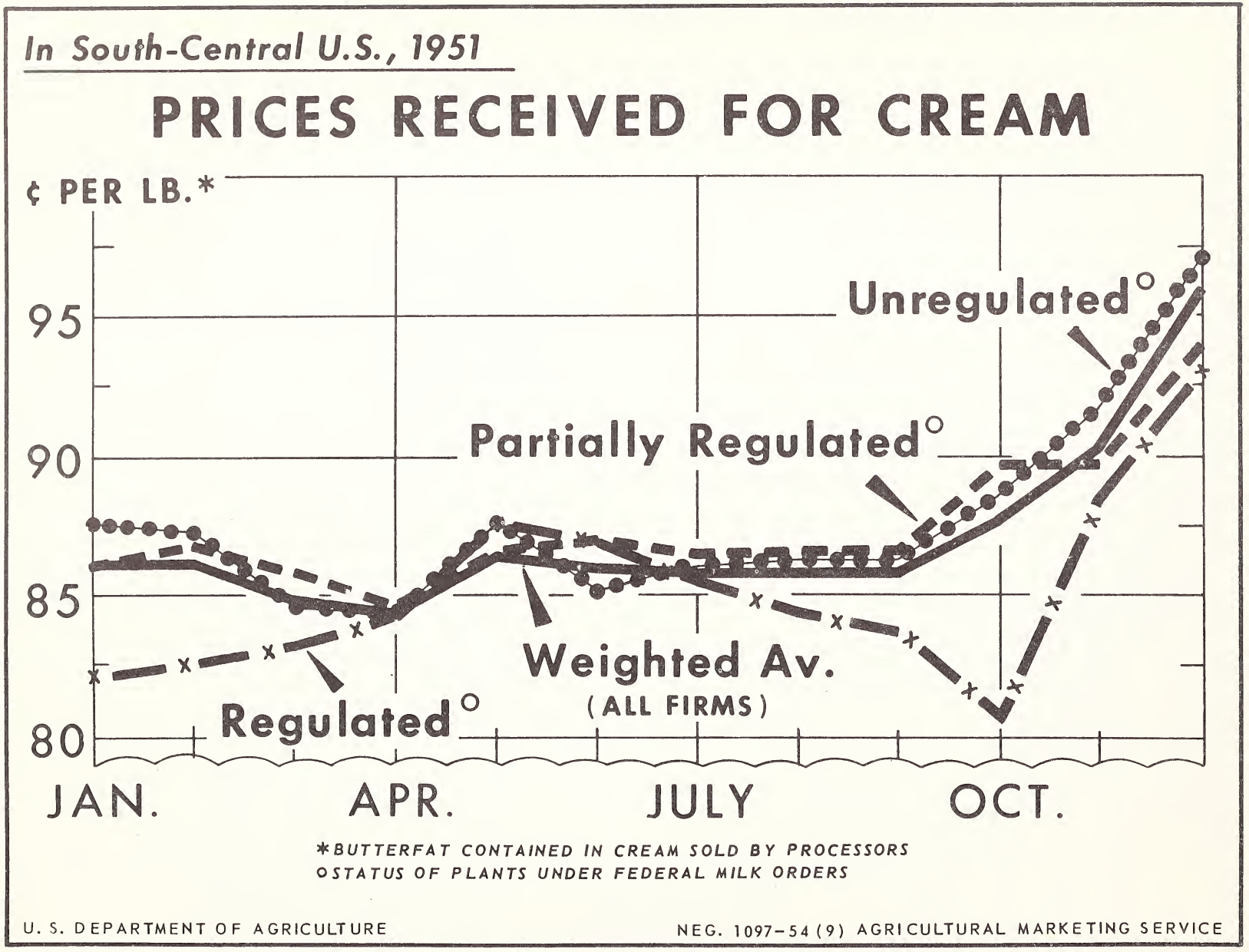

In South-Central U.S., 1951
PRICES RECEIVED FOR CREAM
¢ PER LB.*
95
90
85
80
JAN.
APR.
JULY
OCT.
Unregulated°
Partially Regulated°
Weighted Av.
(ALL FIRMS)
Regulated°
*BUTTERFAT CONTAINED IN CREAM SOLD BY PROCESSORS
°STATUS OF PLANTS UNDER FEDERAL MILK ORDERS
U. S. DEPARTMENT OF AGRICULTURE
NEG. 1097-54 (9) AGRICULTURAL MARKETING SERVICE

Figure 12.

Table 17.- Butterfat sold as sweet cream by type of buyer, by months, 1951

Month	Sales to buyers								Total
	Brokers	Multiple-use manufacturing	Butter manufacturer	Ice cream manufacturers	Fluid milk and ice cream	Fluid milk & multiple-use mfg.	Fluid milk	Other	
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
January	61,923	51,098	86,628	104,881	150,976	2,643	5,351	1,815	465,315
February	103,757	81,984	24,807	108,777	120,273	1,782	5,602	2,014	448,996
March	135,596	159,957	30,192	177,770	193,624	5,479	4,821	2,445	709,384
April	106,976	134,813	29,984	150,518	187,226	4,023	9,545	2,570	625,655
May	94,586	92,364	86,871	210,220	252,952	6,035	4,114	6,128	753,270
June	103,337	165,768	34,696	214,896	243,923	7,752	3,853	1,848	776,073
July	94,219	115,831	25,736	191,734	305,612	4,046	6,302	1,260	744,740
August	87,445	143,227	25,024	189,040	303,247	9,363	8,897	2,833	769,076
September	61,613	124,780	45,280	160,174	285,358	5,597	13,682	2,029	698,513
October	84,748	124,195	19,910	131,963	231,505	7,538	15,705	2,563	618,127
November	24,606	119,623	18,618	104,656	209,999	7,037	16,505	3,427	504,471
December	27,032	72,371	54,304	108,768	161,193	6,009	17,202	2,437	449,316
Year	985,838	1,386,011	482,050	1,853,397	2,645,888	67,304	111,579	31,369	7,563,436
	Percentage of total sales								
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
January	13.3	11.0	18.6	22.5	32.4	0.6	1.2	0.4	100.0
February	23.1	18.3	5.5	24.2	26.8	.4	1.2	.5	100.0
March	19.1	22.5	4.3	25.0	27.3	.8	.7	.3	100.0
April	17.1	21.6	4.8	24.1	29.9	.6	1.5	.4	100.0
May	12.6	12.3	11.5	27.9	33.6	.8	.5	.8	100.0
June	13.3	21.4	4.5	27.7	31.4	1.0	.5	.2	100.0
July	12.7	15.6	3.5	25.7	41.0	.5	.8	.2	100.0
August	11.4	18.6	3.3	24.6	39.4	1.2	1.1	.4	100.0
September	8.8	17.9	6.5	22.9	40.8	.8	2.0	.3	100.0
October	13.7	20.1	3.2	21.4	37.5	1.2	2.5	.4	100.0
November	4.9	23.7	3.7	20.7	41.6	1.4	3.3	.7	100.0
December	6.0	16.1	12.1	24.2	35.9	1.3	3.8	.6	100.0
Percent of total	13.0	18.3	6.4	24.5	35.0	.9	1.5	.4	100.0

Table 18.- Butterfat sold as sweet cream, by area, by months, 1951

Area	January	February	March	April	May	June	July
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
NE Kansas and NW Missouri	130,648	55,533	97,622	86,448	190,532	117,497	99,221
SE Kansas	49,293	42,402	74,601	66,058	103,215	92,310	98,682
Central and NE Oklahoma	31,829	18,257	36,070	36,275	39,504	42,322	46,945
NE Missouri	23,004	15,492	10,722	51,310	9,[illegible]94	7,384	2,936
Southern Missouri	132	198	132	264	198	264	—
Arkansas	6,600	6,534	6,564	1,988	4,950	—	1,485
Western Kansas	9,711	7,901	9,306	9,028	11,133	11,751	10,458
SE and Western Oklahoma	1,150	921	784	1,974	2,378	1,296	7,493
SE Nebraska and SW Iowa	41,021	39,990	47,883	47,661	60,486	71,737	78,946
Texas	87,571	154,499	297,188	240,048	220,421	305,832	235,772
Colorado	37,717	22,184	42,604	37,255	56,737	68,485	129,871
Georgia	—	320	6,720	—	—	—	—
Indiana	28,067	46,598	46,940	—	—	—	—
Louisiana	9,600	12,800	21,525	15,200	6,400	11,200	7,200
New Mexico	16,966	26,379	28,820	35,154	48,122	52,699	30,741
Total	473,309	450,008	727,481	628,663	754,070	782,777	749,750

Area	August	September	October	November	December	Total	Percentage of total
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Percent
NE Kansas and NW Missouri	102,848	118,415	95,859	116,836	108,630	1,320,089	17.3
SE Kansas	98,189	71,617	68,835	66,999	54,637	886,838	11.7
Central and NE Oklahoma	47,894	76,926	53,614	35,382	15,159	480,177	6.3
NE Missouri	2,240	3,690	7,197	18,729	8,077	160,775	2.1
Southern Missouri	—	—	—	—	—	1,188	1/
Arkansas	1,152	1,122	4,620	3,630	4,947	43,592	.6
Western Kansas	17,476	24,905	27,695	23,433	15,172	177,969	2.3
SE and Western Oklahoma	6,591	2,394	1,334	783	2,449	29,547	.4
SE Nebraska and SW Iowa	83,843	51,480	52,978	41,181	38,251	655,457	8.6
Texas	263,434	225,560	193,527	105,663	124,315	2,453,830	32.2
Colorado	105,358	86,662	68,670	63,793	53,861	773,197	10.2
Georgia	—	—	—	—	—	7,040	.1
Indiana	—	—	—	—	—	121,605	1.6
Louisiana	—	7,040	9,920	6,400	10,400	117,685	1.5
New Mexico	42,929	29,307	34,255	24,459	14,418	384,249	5.1
Total	771,954	699,118	618,504	507,288	450,316	7,613,238	100.0

1/ Less than 0.05 percent.

Table 19.- Butterfat sold as sweet cream and as other cream by percentage of butterfat content, South Central area, 1951

Butterfat content	Butterfat sold as					
	Sweet cream		Other cream		Total	
	Quantity	Percentage	Quantity	Percentage	Quantity	Percentage
Percent	Pounds	Percent	Pounds	Percent	Pounds	Percent
11	-	-	147	0.13	147	1/
12	-	-	34	.03	34	1/
14	-	-	726	.63	726	0.01
15	-	-	252	.22	252	1/
16	-	-	1,330	1.15	1,330	.02
18	-	-	297	.26	297	1/
19	-	-	1,656	1.43	1,656	.02
20	-	-	2,315	2.00	2,315	.03
21	-	-	1,150	.99	1,150	.01
22	-	-	1,209	1.04	1,209	.02
23	-	-	149	.13	149	1/
24	-	-	972	.84	972	.01
26	107	1/	-	-	107	1/
27	-	-	1,993	1.72	1,993	.03
28	-	-	133	.11	133	1/
30	35,969	0.48	-	-	35,969	.47
31	1,509	.02	8,328	7.18	9,837	.13
32	133	1/	8,422	7.26	8,555	.11
33	2,724	.04	267	.23	2,991	.04
34	5,981	.08	8,521	7.35	14,502	.19
35	1,711	.02	30,910	26.66	32,621	.42
36	14,715	.19	16,581	14.30	31,296	.41
37	17,413	.23	2,644	2.28	20,057	.26
38	38,403	.51	12,911	11.13	51,314	.67
39	56,180	.74	3,845	3.32	60,025	.78
40	7,192,773	95.10	2,276	1.96	7,195,049	93.69
41	44,913	.59	975	.84	45,888	.60
42	27,081	.36	7,896	6.81	34,977	.46
43	16,380	.22	-	-	16,380	.21
44	17,707	.23	-	-	17,707	.23
45	10,443	.14	-	-	10,443	.14
46	3,815	.05	-	-	3,815	.05
47	1,163	.02	-	-	1,163	.02
48	611	.01	-	-	611	.01
49	2,744	.04	-	-	2,744	.04
50	69,676	.92	-	-	69,676	.91
51	1,077	.01	-	-	1,077	.01
52	208	1/	-	-	208	1/
Total	7,563,436	100.00	115,939	100.00	7,679,375	100.00

1/ Less than 0.005 percent.

Table 20.- Number and average of sales of sweet cream classified according to type of buyers, by months, 1951

Month	Brokers		Multiple-use manufacturing		Butter manufacturer		Ice cream manufacturers		Fluid milk and ice cream	
	Sales	Size of sale	Sales	Size of sale	Sales	Size of sale	Sales	Size of sale	Sales	Size of sale
	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.
January	39	1,588	25	2,044	41	2,113	314	334	382	395
February	51	2,034	23	3,999	26	954	284	383	340	354
March	46	2,948	39	4,101	32	944	407	437	469	413
April	50	2,140	32	4,213	29	1,034	381	395	473	396
May	25	3,783	41	2,253	37	2,348	431	488	466	543
June	29	3,563	41	4,043	30	1,157	457	470	367	665
July	25	3,769	46	2,518	27	953	414	463	384	796
August	30	2,915	60	2,387	32	782	471	401	522	581
September	25	2,465	69	1,808	30	1,509	416	385	532	536
October	32	2,648	87	1,428	25	796	380	347	582	398
November	18	1,367	58	2,062	26	716	320	327	476	441
December	17	1,590	27	2,680	34	1,597	319	341	393	410
Total or average	387	2,547	548	2,529	369	1,306	4,594	403	5,386	491

Month	Fluid milk and multiple-use manufacturer		Fluid milk		Other		Total	
	Sales	Size of sale	Sales	Size of sale	Sales	Size of sale	Sales	Size of sale
	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.
January	11	240	80	67	50	36	942	494
February	5	356	72	78	52	39	853	526
March	11	498	74	65	67	36	1,145	620
April	21	192	103	93	67	38	1,156	541
May	32	189	52	79	79	78	1,163	648
June	13	596	35	110	51	36	1,023	759
July	19	213	32	197	17	74	964	773
August	45	208	58	153	49	58	1,267	607
September	42	133	108	127	39	52	1,261	554
October	58	130	159	99	57	45	1,380	448
November	62	114	166	99	70	49	1,196	422
December	54	111	159	108	53	46	1,056	425
Total or average	373	180	1,098	102	651	48	13,406	564

Table 21.--Butterfat sold as sweet cream, cumulated by sellers ranked according to volume sold, by months, 1951

Firms in group	Jan.	Feb.	Mar.	Apr.	May	June	July
Number	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
3	314,869	303,060	433,438	382,790	483,661	520,313	367,098
4	356,215	340,872	495,268	450,431	548,555	589,838	449,553
5	393,066	373,316	555,875	502,015	612,853	646,195	530,849
6	419,274	399,972	613,868	550,572	660,332	701,473	586,610
7	436,595	426,479	671,312	597,871	705,740	734,001	642,150
8	448,137	434,636	685,867	609,517	722,348	750,349	675,256
9	455,167	442,075	700,155	617,442	734,853	759,199	693,158
10	460,447	445,185	707,734	623,033	741,925	765,155	709,811
11	463,530	446,867	709,002	624,631	747,930	770,319	724,627
12	464,488	448,460	709,514	625,655	752,794	774,207	737,725
13	465,256	448,940	709,884		753,270	776,041	740,331
14	465,315	448,996				776,073	742,356
15							743,996
16							744,417
17							744,740
18							
19							
Total	465,315	448,996	709,884	625,655	753,270	776,073	744,740

	Aug.	Sept.	Oct.	Nov.	Dec.	Total sales 1951	Percentage of total
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Percent
3	420,373	427,350	400,901	327,261	276,761	4,602,908	60.86
4	498,254	479,779	447,557	371,891	320,618	5,288,450	69.92
5	563,662	531,683	489,159	406,751	364,330	5,914,656	78.20
6	625,998	576,611	528,170	439,384	398,245	6,454,636	85.34
7	673,974	615,894	565,210	467,195	430,565	6,966,986	92.11
8	719,134	647,894	591,499	485,830	438,870	7,118,545	94.12
9	733,907	668,830	602,907	494,101	443,542	7,255,241	95.93
10	748,365	686,761	613,493	502,236	447,613	7,357,738	97.28
11	758,755	691,231	616,063	503,118	448,724	7,446,445	98.45
12	761,945	695,050	617,147	503,928	449,093	7,493,823	99.08
13	764,827	696,986	618,014	504,230	449,316	7,526,084	99.51
14	767,553	697,854	618,127	504,471		7,542,776	99.73
15	768,501	698,406				7,549,560	99.82
16	768,815	698,513				7,555,396	99.89
17	769,076					7,559,240	99.94
18						7,562,569	99.99
19						7,563,436	100.00
Total	769,076	698,513	618,127	504,471	449,316	7,563,436	100.00

Table 22.- Butterfat sold as specified types of cream by all sellers and 6-firm group, South Central area and as sweet cream at wholesale, Boston, by months, 1951

Month	Butterfat sold as-						Sweet cream at wholesale Boston, Massachusetts
	All cream		Sweet cream		40 percent sweet cream		
	All sellers	6-firm	All sellers	6-firm	All sellers	6-firm	
	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds	Pounds
January	471,739	399,744	465,315	399,744	441,798	399,577	527,109
February	458,809	394,099	448,996	394,035	431,213	394,035	556,644
March	714,294	609,052	709,884	608,988	674,527	595,959	400,884
April	628,403	529,039	625,655	528,975	607,219	528,701	188,100
May	765,509	635,468	753,270	635,468	736,409	632,820	207,240
June	799,470	659,761	776,073	659,569	747,323	656,015	195,261
July	767,531	549,022	744,740	549,022	680,965	546,070	660,726
August	775,560	608,630	769,076	608,566	703,367	608,566	406,725
September	701,367	563,990	698,513	563,990	668,270	563,749	410,223
October	631,383	518,554	618,127	518,554	585,369	517,698	279,939
November	513,671	419,803	504,471	419,803	473,670	417,294	983,367
December	451,639	386,853	449,316	386,853	442,643	386,296	871,101
Total	7,679,375	6,274,015	7,563,436	6,273,567	7,192,773	6,246,780	5,687,319
Simple average	639,948		630,286		599,398		473,943
Percent of sales in Boston	135.0	110.3	133.0	110.3	126.5	109.8	100.0

Table 23.- Weighted average price per pound of butterfat in sweet cream, received by all sellers, by firms ranked according to price received, by months, 1951

Rank of firm	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Highest	90.0	94.8	88.4	88.7	93.1	91.3	93.5	94.6	95.0	95.0	99.1	98.5	95.0
2	89.6	90.0	88.4	88.4	88.5	89.0	91.0	90.0	91.0	95.0	96.2	97.9	91.2
3	88.9	88.6	88.1	86.7	88.1	88.7	89.9	90.0	90.1	91.4	95.0	97.1	90.6
4	88.2	88.3	86.0	85.0	87.9	88.2	89.0	88.7	89.0	88.8	92.3	97.0	89.3
5	87.8	88.2	84.8	84.9	87.8	88.1	88.5	88.6	88.7	88.8	92.3	97.0	88.8
6	86.5	86.4	84.7	84.7	87.8	87.8	88.2	88.0	88.0	88.7	91.6	97.0	88.1
7	86.0	86.1	84.2	83.7	87.5	86.2	88.1	87.7	86.8	88.3	90.7	96.6	87.1
8	85.5	85.7	84.0	83.5	87.0	85.7	85.5	86.2	85.1	88.0	90.2	95.0	86.6
9	85.3	85.0	83.8	83.4	86.5	85.5	84.7	85.4	84.7	87.8	89.7	94.8	86.4
10	85.2	85.0	83.3	82.3	86.2	84.8	84.7	84.8	84.0	87.7	89.4	93.8	86.1
11	84.6	84.6	83.2	81.6	85.8	84.1	84.2	84.0	84.0	86.8	88.2	92.2	85.6
12	83.3	83.0	81.9	80.5	84.5	83.6	83.5	83.1	83.2	83.6	85.0	92.1	85.0
13	80.7	80.1	80.0		83.7	83.1	82.8	83.1	82.8	81.6	84.0	88.7	84.6
14	80.4	80.0				81.9	82.8	83.0	81.9	79.8	81.5		84.5
15							82.6	82.0	80.9				84.0
16							82.2	81.7	78.1				84.0
17							80.6	79.2					82.9
18													82.6
19													82.1
Average													
Weighted	85.7	86.0	84.9	84.3	86.3	85.9	85.6	85.6	85.6	87.5	90.0	95.8	86.6
Simple	85.9	86.1	84.7	84.4	87.3	86.3	86.0	85.9	85.8	88.0	90.4	95.2	86.6

Table 24.- Weighted average price per pound of butterfat in 40 percent sweet cream, received by all sellers, by firms ranked according to price received, by months, 1951

Rank of firm	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
Highest	89.6	94.8	88.4	88.7	88.5	91.3	93.5	94.6	95.0	88.8	99.1	97.9	91.0
2	88.9	88.6	88.3	88.4	88.1	89.0	91.0	90.0	91.0	88.8	95.0	97.1	90.6
3	88.2	88.3	88.1	86.6	87.9	88.7	89.0	90.0	89.0	88.7	92.2	97.0	89.3
4	87.8	88.2	84.8	85.0	87.8	88.2	88.5	88.7	88.7	88.3	92.0	97.0	88.8
5	86.5	86.4	84.7	84.9	87.6	87.8	88.2	88.6	88.0	88.0	91.6	96.6	88.1
6	86.0	86.1	84.2	84.7	87.1	86.2	88.1	88.0	86.8	87.8	90.7	95.0	88.0
7	85.5	85.7	83.8	83.7	86.5	85.7	88.0	87.3	85.9	87.7	90.2	94.8	87.4
8	85.3	85.0	83.3	83.5	86.2	85.5	85.5	86.2	85.7	86.8	89.7	93.8	87.1
9	85.2	85.0	81.9	82.3	85.8	84.8	84.8	84.8	84.7	83.0	89.4	92.1	86.6
10	84.6	84.6	80.0	81.6	84.5	83.6	84.2	84.0	84.0	80.7	88.2	91.3	86.4
11	83.0	83.0			83.2	83.6	82.8	83.1	84.0	79.9	84.0	87.4	86.3
12						83.3	82.8	82.1	82.8				85.6
13						77.9	82.2	82.0					85.5
14							82.0						84.6
15							81.8						84.5
16													84.0
17													82.8
18													79.8
19													
Average													
Weighted	86.0	86.1	84.9	84.4	86.4	85.9	85.7	85.7	85.7	87.6	90.4	95.8	86.8
Simple	86.4	86.9	84.8	84.9	86.7	85.8	86.2	86.9	87.1	86.2	91.1	94.5	86.5

Table 25.- Weighted average price per pound of butterfat in sweet cream, received by all sellers, by type of buyer, by months, 1951

Month	Brokers	Multiple use mfg.	Butter mfrs.	Ice cream mfrs.	Fluid milk and ice cream	Fluid milk and multiple use mfg.	Fluid milk	Other	Weighted average
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
January	84.1	86.6	84.1	86.5	86.3	88.6	88.6	88.6	85.7
February	85.4	85.6	82.4	86.9	86.4	89.0	88.6	89.0	86.0
March	82.5	83.9	84.0	86.2	86.0	89.0	88.8	89.0	84.9
April	82.1	82.2	84.0	85.4	86.0	89.0	88.9	89.0	84.3
May	85.3	86.0	83.6	86.8	87.3	89.0	88.9	87.9	86.3
June	83.9	84.5	87.1	86.1	87.2	89.0	88.9	89.0	85.9
July	82.9	83.8	86.8	86.0	86.7	89.0	88.9	90.1	85.6
August	82.6	83.6	87.0	85.9	86.9	87.9	87.8	89.0	85.6
September	83.7	83.7	83.5	86.1	86.6	88.1	88.3	88.8	85.6
October	86.9	86.9	86.7	87.5	88.0	89.0	89.0	89.0	87.5
November	89.1	90.3	86.9	89.7	90.2	92.1	90.8	91.8	90.0
December	96.1	96.0	94.3	95.7	96.0	97.2	97.5	95.7	95.8
Average									
Weighted	84.3	85.5	85.7	87.0	87.6	89.8	90.4	89.6	86.6
Simple	85.4	86.1	85.9	87.4	87.8	89.7	89.6	89.7	86.9

Table 26.- The amount by which the weighted average price for each type of buyer differed from the weighted monthly average price of all sales, by months, 1951

Month	Broker	Multiple use mfg.	Butter mfrs.	Ice cream mfrs.	Fluid milk and ice cream	Fluid milk and multiple use mfg.	Fluid milk	Other
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents
January	-1.6	.9	-1.6	.8	.6	2.9	2.9	2.9
February	- .6	- .4	-3.6	.9	.4	3.0	2.6	3.0
March	-2.4	-1.0	- .9	1.3	1.1	4.1	3.9	4.1
April	-2.2	-2.1	- .3	1.1	1.7	4.7	4.6	4.7
May	-1.0	- .3	-2.7	.5	1.0	2.7	2.6	1.6
June	-2.0	-1.4	1.2	.2	1.3	3.1	3.0	3.1
July	-2.7	-1.8	1.2	.4	1.1	3.4	3.3	4.5
August	-3.0	-2.0	1.4	.3	1.3	2.3	2.2	3.4
September	-1.9	-1.9	-2.1	.5	1.0	2.5	2.7	3.2
October	- .6	- .6	- .8	.0	.5	1.5	1.5	1.5
November	- .9	.3	-3.1	- .3	.2	2.1	.8	1.8
December	.3	.2	-1.5	- .1	.2	1.4	1.7	- .1
Simple average of monthly differences	-1.55	- .84	-1.07	.47	.87	2.81	2.65	2.81

☆ U. S. GOVERNMENT PRINTING OFFICE: 1954 O —322688

NATIONAL AGRICULTURAL LIBRARY
1022715807